10¢ A COPY

The OIL WEEKLY

October 29, 1926 Volume 43. No. 6

MADE OF KEYSTONE COPPER STEEL

MADE OF KEYSTONE COPPER STEEL

MALONEYS AT BORGER, TEXAS

The photograph shows two 3000-Bbl. and eight 250-Bbl. Maloney Tanks, on the Smith Farm of the Lucky Ten Oil Company at Borger, Texas. Sold and erected by distributor, Panhandle Tank Co., Amarillo.

The decided preference for MALONEYS in the Panhandle district, as well as elsewhere, is attributable to the exceptional durability of their material, Keystone Copper Steel, to their patented seam and joint construction which insures gas-tightness, and to their perfected design. Valve and thief-hatch equipment are unexcelled

MALONEY TANK MANUFACTURING COMPANY
Tulsa, Okla.
Distributors at All Principal Petroleum Points

Howell Aluminum "3 in 1" Vacuum Pressure Valve and Thief Hatch—The BEST and LATEST Deck Equipment—POSITIVE Safety

Sizes: 12 to 3000 Barrels

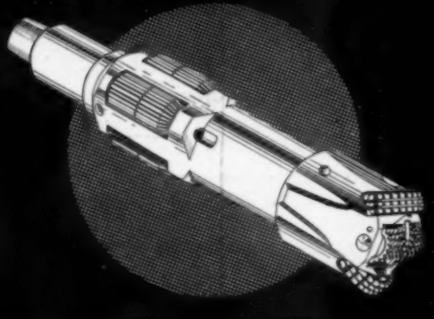
Packed in Steel Bound Crates for Export

MALONEY PATENTED BOLTED COPPER-STEEL TANKS MALONEY

REED ROTARY DRILLING TOOLS

A greater height of popularity in fields all over the world is being attained, day after day, by

Reed Rotary Tools



Reed Roller Bit Company

HOUSTON LOS ANGELES

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 1716 Dallas Ave., Houston, Texas. Subscription price $1.00 per year; 10 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

Congratulations

Miss Tulsa—
Queen of Beauty, High Priestess of Pulchritude
—we salute you!

We salute you as fellow Tulsans, proud of the honor you have accorded us.

Fig. 601.

Knowing something of the merits required to forge ahead in the face of strong and worthy competition, we salute you with a full appreciation of your accomplishment.

To win in a local bathing beauty contest is honor enough. To be a victor in a nation-wide contest of victors is a tribute that comes to few.

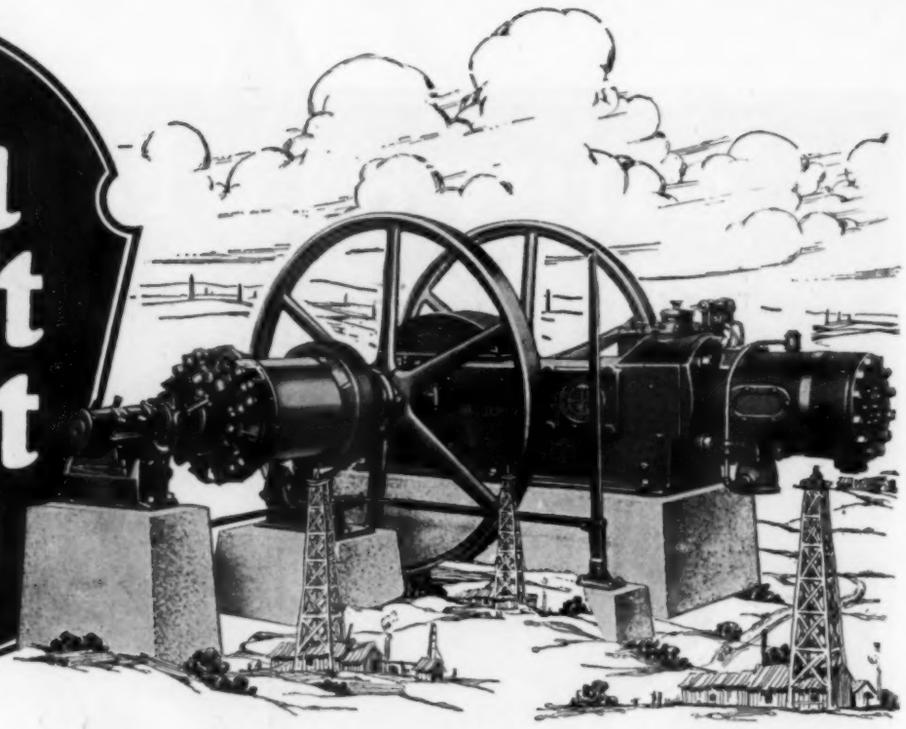
Fig. 604.

Figure 601—[450 to 600 pound pressure] a sturdy pump designed for oil or water service. Extra long stroke gives straight line pull; practical absence of gasket surface adds to long, trouble-free operation.

Figure 604—Gaso Walking Beam and Power Pump for gas or vacuum. Constructed to stand world of abuse. For taking gas from pumping well or putting vacuum on well.

GASO PUMP & BURNER MFG. CO.
Tulsa, Oklahoma

You can't beat it!



Entirely enclosed bed plate.

Air valve on top of bed plate.

Efficient Bessemer governor.

Jump spark ignition.

Sight feed glass through which crankcase oil continually circulates.

6-inch exhaust on 30 H.P. and 35 H. P. engines.

Adjustable and removable main bearings.

Counterweight on crankshaft, giving perfect balance on crank.

Splash lubrication to crank, crosshead and main bearings.

Large, quickly removed side plates give easy access to adjustable crosshead.

Bored crosshead with adjustable shoes.

Outside bolting cylinder readily removed.

Easy to clean water jacket. An easily removed plate on either side of cylinder permits quick access to water jacket space.

Force feed lubrication operating from same eccentric as ignition.

Cleanout type cylinder head. Entire front of cylinder head removable, exposing water jacket.

Metallic Stuffing Boxes.

EXAMINE all the oil field engines you can see out in the fields—and then look at the new Bessemer. Your experience with engines will tell you there's nothing like it.

Examine its sixteen outstanding features of construction, look at the way it's built, note its ruggedness, its simplicity and its symmetry. You'll readily admit that it is the Oil Field Engine you have been waiting for.

It's a Bessemer through and through. It's far advanced in its engineering features and it's sturdy in its construction. Every part is built to do its work for years and years and still more years. It delivers 100% of its power continuously and requires as little attention as any piece of machinery that can be built.

We welcome the closest comparison of the new Bessemer Oil Field Engine with *all* the others. We know you can't beat it!

THE BESSEMER GAS ENGINE COMPANY
62 York Street ∴ ∴ ∴ Grove City, Pa.

California Branch: 727-728 Standard Oil Bldg., Los Angeles
California Distributors: Associated Supply Co., San Francisco—Los Angeles

BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

Say you saw it in The OIL WEEKLY

The sun pump
that robs your storage tanks

WARM days and cool nights conspire and co-operate to pump valuable gasoline from your storage tanks. By keeping tank temperature more uniform you cut down evaporation loss. Johns-Manville Vapor Tight Insulated Tank Tops* keep the interior of the tanks at an even temperature. They seal the roof and eaves so that vapor cannot escape by wind drift.

Tanks equipped with Johns-Manville Vapor Tight Insulated Tank Tops* mean real economy.

*Patented, other patents pending

JOHNS-MANVILLE Inc., 292 Madison Ave. at 41st St., New York
Branches in all large cities
For Canada: CANADIAN JOHNS-MANVILLE CO., Ltd., Toronto

Through Asbestos and its allied products
INSULATION
BRAKE LININGS
ROOFINGS
PACKINGS
CEMENTS
FIRE PREVENTION PRODUCTS

JOHNS-MANVILLE
Oil Industry Department

Say you saw it in The OIL WEEKLY

LEIDECKER
Spiral Bits

Patented
Other Patents Pending.

Heavy Traffic

MODERN Industry is like modern traffic. It demands "Action." Speed and Performance are the requirements of progress as well as the determining factors of survival.

Drilling oil wells with ordinary bits is like driving through congested city traffic with an old-time "one-lunger." The late automobiles combine the improvements essential to present day transportation. Spiral Bits offer those necessary features of Speed and Performance for the well drilling industry.

"Drilling Tools Designed Right Will Drill More"

Order through your Supply Store

The Leidecker Tool Co.

Manufacturers of
Well Drilling Tools, Machinery and Supplies
"Leidecker" Steel Frame Drilling Machines

Main Office and Works:
MARIETTA, OHIO

Export Office: 90 West St., New York City
Branches: Casper and Basin, Wyoming; Bartlesville, Okla.

SPIRAL DRILLING TOOL COMPANY—Agents
329 E. Fourth St., Tulsa. Phone 3-1050

Drilling in a wet hole, as often encountered in Mid-Continent fields, is a favorite duty of Spiral Bits. The advantage of the Spiral design is most evident in this service.

By thoroughly mixing the mud they relieve the diving and sticking so common with paddle style bits and save the ruinous grief to the wire line.

The full-round hole they drill makes under-reaming unnecessary. The Pipe follows the Tools.

Faster, Easier, Straighter.

Write for complete information.

Say you saw it in The OIL WEEKLY

1926 MODELS New and Improved

The Lucey Heavy Duty 66" Traveling Block with 30" sheaves for 1⅛" wire line.

The pictures show two of the newest designs in traveling blocks which have recently been announced as ready for the trade.

BOTH ARE EQUIPPED WITH

AMERICAN HEAVY DUTY TYPE "C" ROLLER BEARINGS

The Gumbo Buster 66" Traveling Block manufactured by American Well & Prospecting Co.

Roller Bearing Equipped

The later and more modern Traveling Blocks, Crown Blocks, Reverse Clutches and Winches designed for heavy duty are being made to operate on American Roller Bearings.

Heavier blocks with larger sheaves are thus made practical. Less wear, greater speed and all around smoother, more satisfactory operation are the assured advantages.

In these two newly introduced traveling blocks the engineers have staked everything on the known quality of American Heavy Duty Type "C" Roller Bearings. The predecessors of these blocks were also equipped with "American" bearings and the successful operating experience with them largely made possible the improvements designed into these 1926 models.

The tough characteristics of these special industrial bearings are just right to overcome the characteristic toughness of the jobs which blocks, clutches and winches have to handle. That's why American Rollers have become

"The Standardized Bearing of the Oil Fields"

All manufacturers who have used this type of bearings know by the service records of their equipment that they are one step nearer the goal of perfection.

Get them in the first place; use them to replace plain bearings

Write for catalogue

SPECIALISTS IN PRODUCTION OF ROLLER BEARINGS FOR THE OIL INDUSTRY

AMERICAN ROLLER BEARING CO.
PITTSBURGH, PENNA.

LARGEST MANUFACTURERS OF ROLLER BEARINGS FOR INDUSTRIAL PURPOSES

Be Careful In The Selection Of Lubricants For Your Motorized Equipment

Passenger cars and trucks of different makes vary considerably in type and design.

Be sure that you understand: (1). The type of lubricating system used, which determines the method of feeding the oil. (2). The type of cooling system used, this factor having more or less effect on the operating temperatures of various parts of the motor.

The proper lubrication of motor equipment means not only the lubrication of the engine cylinders — but the complete lubrication of all of the moving parts of the motor. Much harm can result from the use of too heavy an oil in a pressure system not designed to handle it—also where the "splash" system is used, the oil must not only flow easily, but must atomize readily so as to reach certain bearings which can be lubricated only by a fine mist. Your passenger cars and your trucks are designed to give you many years of service—if they are properly lubricated.

HUMBLE OIL & REFINING CO.
HUMBLE OILS
HOUSTON, TEXAS

Reg. U. S. Pat. Off.

There is a Humble Oil which is specially prepared to meet every bearing need in your plant, your trucks, or in your automobile.

Humble Motor Oils are the result of years of experience in lubricating internal combustion engines. The recommendations of Humble engineers are an added factor of safety. Whether you operate one passenger car and truck, or a whole fleet of motorized equipment, it will pay you to learn more about Humble Oils.

Humble Oil & Refining Co.

Producers ~ Pipe Lines ~ Refiners ~ Marketers

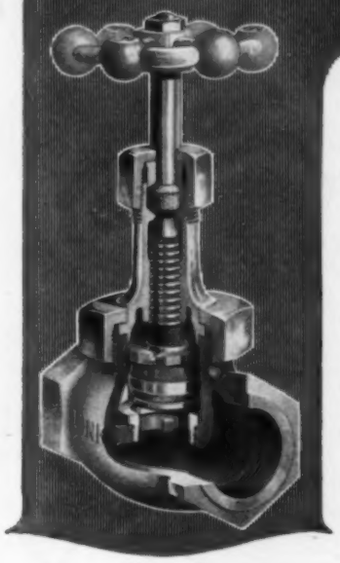
Keep down the cost of upkeep!

Minimum Maintenance Expense Insures Maximum Economy

"Economy" is the watchword of industry these days, and anything which makes it possible to reduce costs is of vital interest to the men responsible for maintaining production schedules.

In the oil industry, discriminating valve users are no longer buying just valves; they are buying a definite valve service—continuous satisfactory performance over long periods of time, freedom from frequent costly repairs and replacements, and convenient sources of supply to insure prompt deliveries.

LUNKENHEIMER "FERRENEWO" AND "RENEWO" VALVES



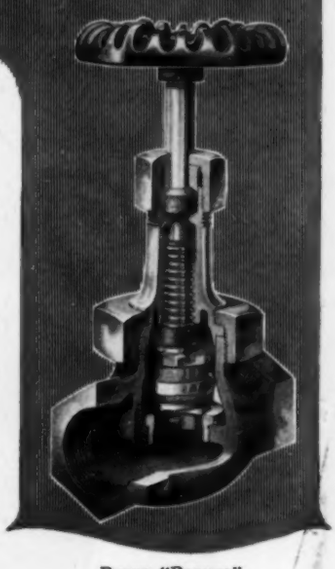
Iron Body "Ferrenewo"
150 lb. W. S. P.
Union Bonnet Type ¼ to 2 in.
Outside Screw and Yoke Type
2½, 3 and 4 in.

embody all the necessary factors to meet the requirements of the most critical purchaser of equipment.

The Iron Body "Ferrenewo" for the lower pressures, and the Bronze "Renewo" for the higher pressures provide an ideal combination upon which an ever increasing number of plants are advantageously standardizing.

They are of the same design, with regrindable seating surfaces. When worn beyond repair the nickel seats and discs can easily be renewed. All other parts of the valves are likewise renewable. Seat faces can be reground and parts renewed without removing the valves from pipe lines.

In sizes ¼" to 2" inclusive, union bonnet types, all parts of the "Ferrenewo" and medium "Renewo" are interchangeable, with the exception of the bodies and bonnet rings. This feature makes it unnecessary to carry a wide assortment of replacement parts, reduces stock-room investment and simplifies ordering and handling.



Bronze "Renewo"
Medium, 200 lb. W. S. P.
Extra Heavy, 300 lb. W. S. P.
Union Bonnet Type ¼ to 3 in.
Outside Screw and Yoke Type
1¼, 2, 2½ and 3 in.

Lunkenheimer Distributors, located in all commercial centers, carry complete stocks and render prompt service. They will be glad to explain in detail the service features of the "Ferrenewo" and "Renewo" combination.

THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI, OHIO, U. S. A.
NEW YORK CHICAGO BOSTON LONDON
EXPORT DEPT. 129-135 LAFAYETTE ST., NEW YORK

The "Guide to Better Service" shows in convenient form an ideal selection of Valves and Engineering Appliances. The center pages illustrate the application of Lunkenheimer Boiler Mountings conforming to the A. S. M. E. Code. Fill in and mail the attached coupon and a copy will be sent without obligation.

Fill in and mail this coupon for your "Guide to Better Service"

THE LUNKENHEIMER CO. "QUALITY" P. O. Box 876, Cincinnati, Ohio

Please send me a copy of Lunkenheimer "Guide to Better Service." JK

Name .....

Firm .....

Address .....

102-39-90

Worth 4 times it's cost

and then some

Regan Pipe Suspension & Control Heads

Maintains positive pressure control.

Seals each casing string securely.

Provides proper pipe suspension after landing casing strings.

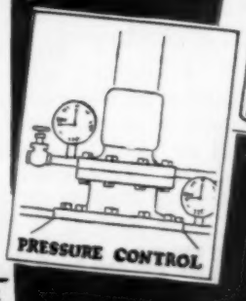
Prevents wild blowouts.

Eliminates an infinite amount of labor.

Eliminates gas leaks and fire hazard.

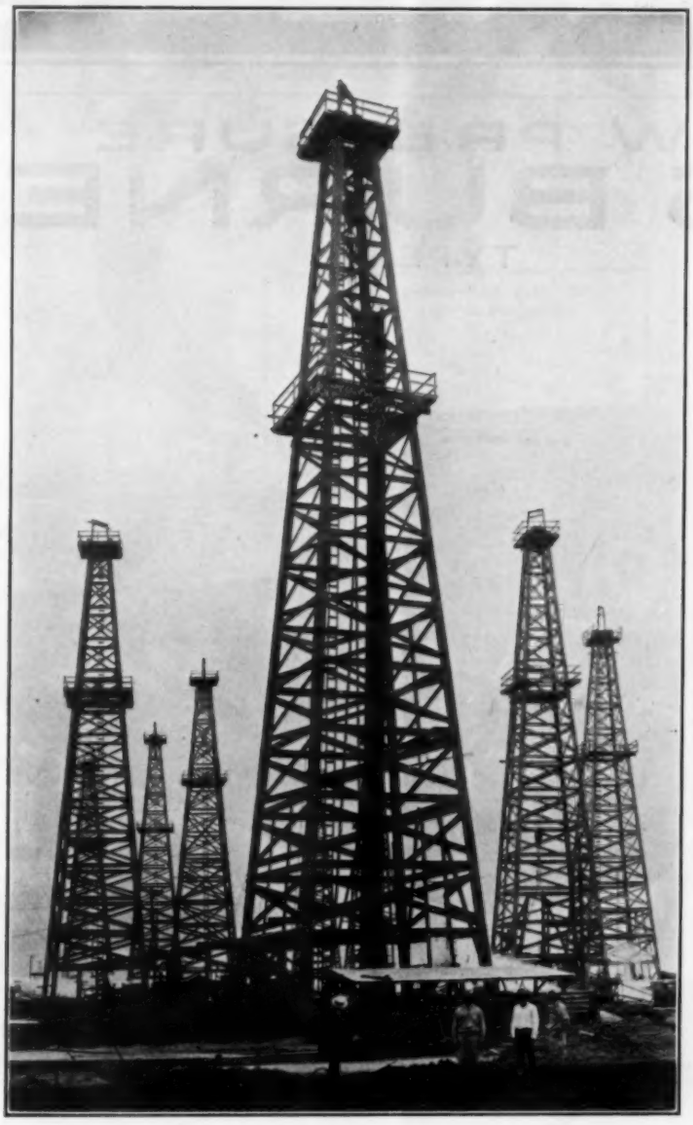
Conserves space in cellar.

A new folder showing progressive illustrations of how to properly set casing will be mailed upon request.



Regan Forge & Engineering Co.

San Pedro California



ANOTHER ELECTRIC RIG
Gulf Production Co. well Weed No. 1

Electric Power must be convenient, reliable, economical and capable to be "pulling" what it is today in Gulf Coast Fields. A letter to Lock Drawer 809, Beaumont, Texas, will bring the story. What Electric Power is doing for others it will do for you.

Eastern Texas Electric Company - Louisiana Electric Company INC.
Gulf States Utilities Company - Western Public Service Company
Under the Executive Management of Stone and Webster INC.

DORECO

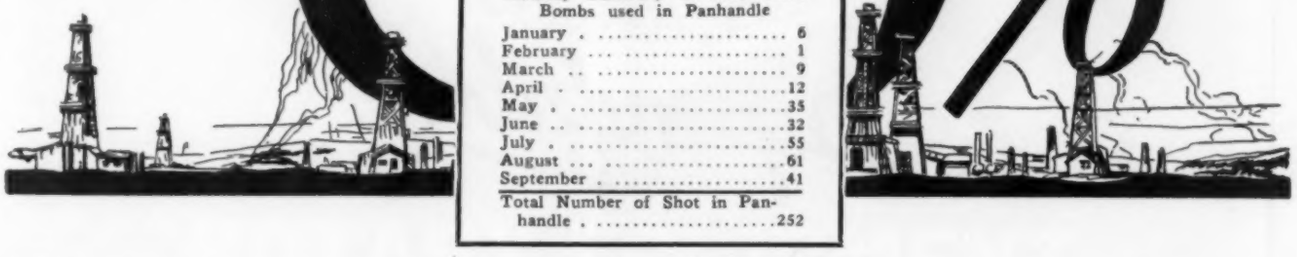
LOW PRESSURE GAS BURNER

TYPE H

THE NATIONAL SUPPLY COMPANIES

Say you saw it in The OIL WEEKLY

In the Texas PANHANDLE 60%



Monthly Summary of Zero Hour Bombs used in Panhandle	
January	6
February	1
March	9
April	12
May	35
June	32
July	55
August	61
September	41
Total Number of Shot in Panhandle	252

Of approximately 462 completed wells—

252 were shot with

ZERO HOUR

SINCE January 1, 1926, 252 Zero Hour Electric Bombs have been successfully used in the Panhandle, on approximately 60% of the completed wells.

All of these 252 Bombs used by 62 different producing companies, exploded the shot as timed, giving a satisfactory shot—a significant fact when taken into consideration that the Texas Panhandle is one of the most difficult fields for detonating shots, due to the heavy oil and the cavey conditions found in the average well.

On Zero Hour Electric Bombs you can depend for safety, a sure shot and protection to your well investment. The average well costs too much today to risk ruining by uncertain shooting methods.

97% of over 2,000 Zero Hour Bombs placed in wells in the Mid-Continent and Rocky Mountain fields—under the most variable and difficult conditions of depth, pressure, etc.—have successfully and accurately exploded the shot. The 3% which **for any reason** have failed to function perfectly were replaced without charge to the user. A Zero Hour Bomb is guaranteed to do the work.

The advice and assistance of our Engineering and Shooting Staff is available to oil producers on request.

Safety—

When printed instructions furnished with each bomb are carefully followed theer is no chance for injury to shooter by premature explosion.

Zero Hour Torpedo Company

710 Cosden Building, Tulsa Oklahoma

Day Phone 2-9612; Night phones 3-1775—3-7650—2-6097—7773

Panhandle Representative

B. A. McCall, P. O. Box 336, Borger, Texas. Phone 110

ZERO HOUR
Electric Bomb

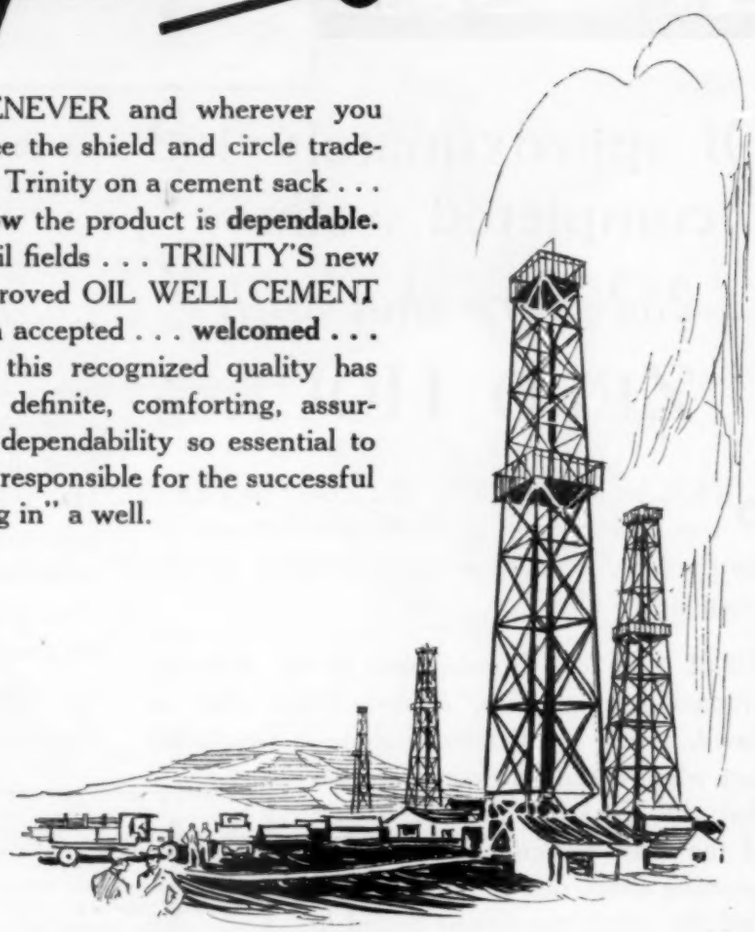
Say you saw it in The OIL WEEKLY

TRINITY
OIL WELL CEMENT

Dependable

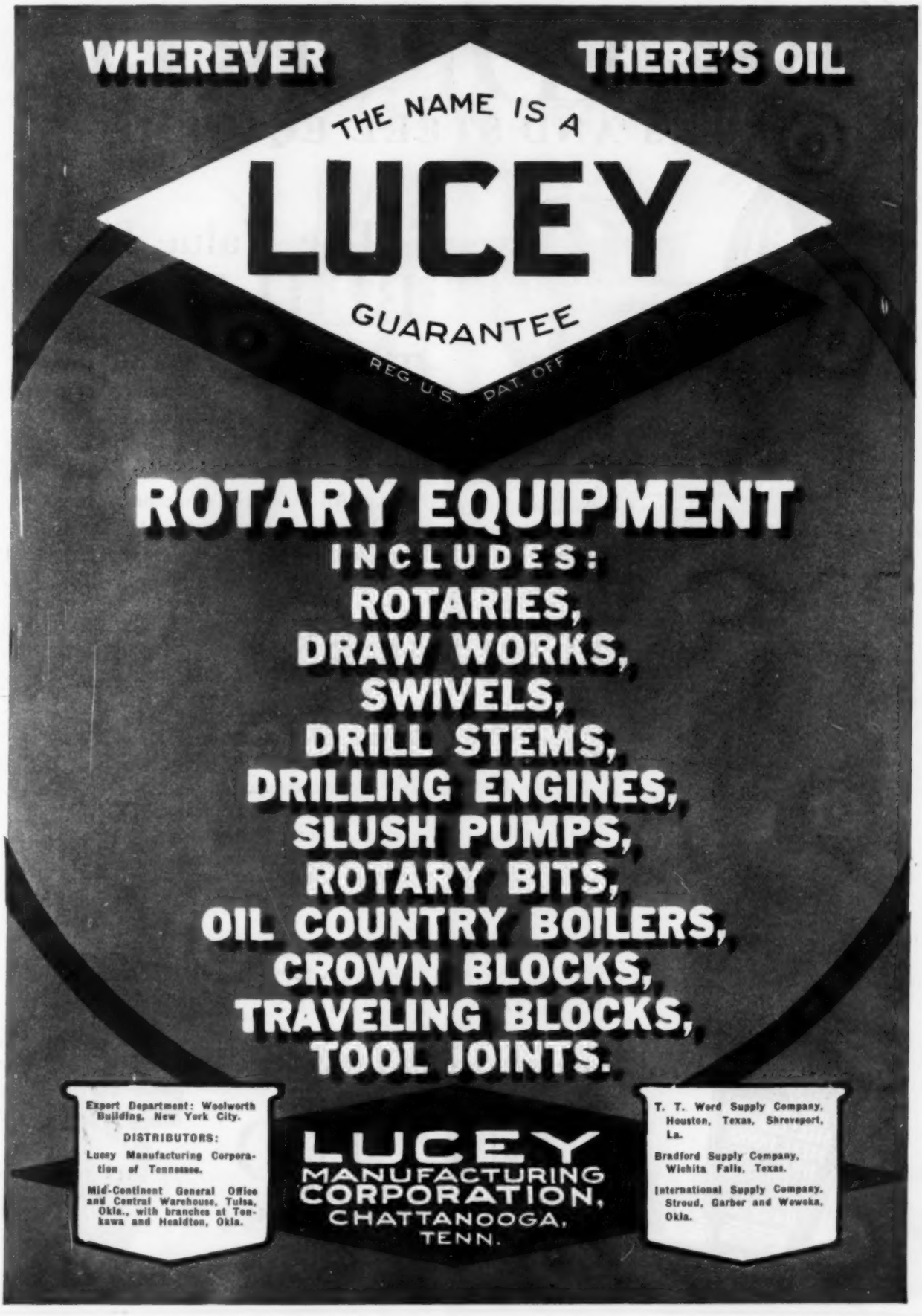
WHENEVER and wherever you see the shield and circle trademark of Trinity on a cement sack . . . you **know** the product is **dependable.** In the oil fields . . . TRINITY'S new and improved OIL WELL CEMENT has been accepted . . . **welcomed . . .** because this recognized quality has given a definite, comforting, assurance of dependability so essential to the men responsible for the successful "bringing in" a well.

Now . . . ready for immediate shipment. Packed in distinctive, extra-heavy, water-proof green bags. Information gladly supplied those interested.



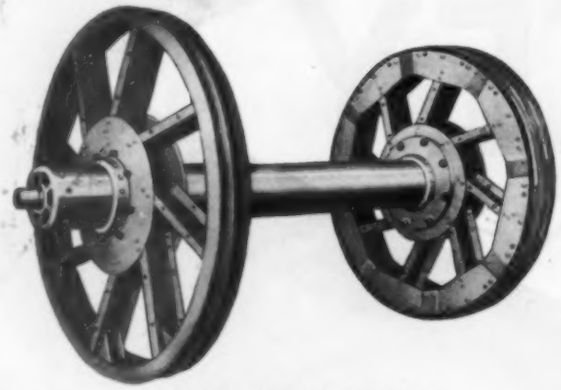
TRINITY PORTLAND CEMENT CO.

DALLAS :-: FT. WORTH


WHEREVER
THERE'S OIL
THE NAME IS A
LUCEY
GUARANTEE
REG. U.S. PAT. OFF
ROTARY EQUIPMENT
INCLUDES:
ROTARIES,
DRAW WORKS,
SWIVELS,
DRILL STEMS,
DRILLING ENGINES,
SLUSH PUMPS,
ROTARY BITS,
OIL COUNTRY BOILERS,
CROWN BLOCKS,
TRAVELING BLOCKS,
TOOL JOINTS.
Export Department: Woolworth Building, New York City.
DISTRIBUTORS:
Lucey Manufacturing Corporation of Tennessee.
Mid-Continent General Office and Central Warehouse, Tulsa, Okla., with branches at Tonkawa and Healdton, Okla.
LUCEY
MANUFACTURING
CORPORATION,
CHATTANOOGA,
TENN.
T. T. Word Supply Company, Houston, Texas, Shreveport, La.
Bradford Supply Company, Wichita Falls, Texas.
International Supply Company, Stroud, Garber and Wewoka, Okla.

"BRADFORD"

RIG IRONS AND STEEL EQUIPMENT

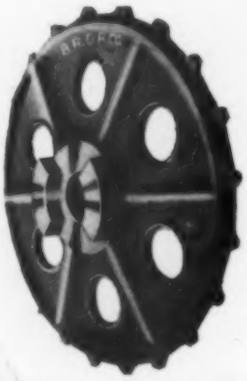


Bradford Bullwheels

Every bolt is accessible—can be tightened with ordinary wrench. Patented hubs securely riveted to shaft. Arms of wheels riveted to heavy steel flanges—which eliminates attaching arms to shaft wheels and prevents getting out of line in handling.

The Value Is BUILT-IN

THE superiority of "Bradford" Rig Irons and Steel Equipment may not be apparent at a glance. The Real Value is BUILT-IN—in the design, the materials and the workmanship. All steel rig equipment may LOOK the same—but put "Bradford" on the job and then watch this "Built-In-Value" become noticeable.



Clutch Sprocket Wheel

IN GENERAL USE

"Bradford" Rig Irons and Steel Equipment are in general use today because of the extremely severe duty they can perform indefinitely. Several features too, are incorporated—particularly with respect to the ease and accuracy in assembling. Therefore, considering everything, the best way to secure Rig-Equipment-Satisfaction is to specify "Bradford" on your rig equipment needs.

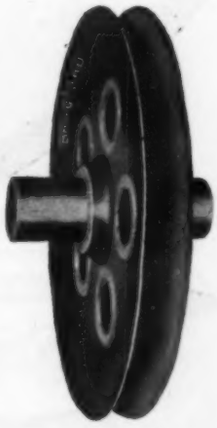
STOCKS MAINTAINED IN ALL ACTIVE FIELDS

MANUFACTURED AND FOR SALE BY

UNITED IRON WORKS, Inc.

KANSAS CITY, MO.

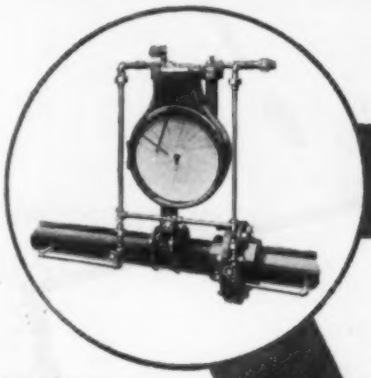
TULSA DALLAS



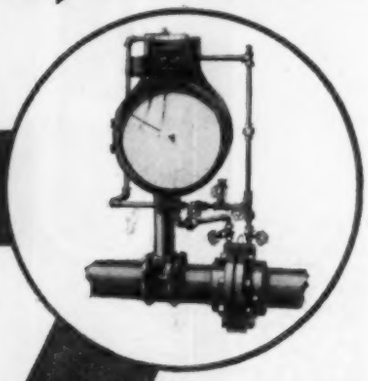
Crown Pulley

Obtain the Height of ACCURACY *and* PRECISION in Measuring Gases and Liquids with

METRIC orifice METERS



Metric Orifice Meter Installation for Light Oils or Water, 2½ and 8 Pipe Connections.



Metric Orifice Meter Installation for Gas —Flange connections.

They put SURE in meaSUREment because of these unexcelled characteristics and advantages:

Small area of surface affected by friction

Minimum number of moving parts

Small angle of movement of pen

Correct length of lever arm

Uniform area of mercury pots

Large area of float

Oil---

With a total weight of less than 40 pounds and with all parts of a size to be installed and handled with small wrenches or pliers, this little Metric is taken everywhere into the oil fields and installed in a great variety of ways to do all types of measuring work of all grades of oil—*accurately, dependably.*

Gas---

These meters meet all demands in gas measurement from casing head to vacuum line,—from production to consumption and at every station in between,—with a precision in operation that approximates perfection. Throughout the range of service variations they give results that are *extremely accurate.*

Measure With Metrics

Westcott & Greis, Inc.
Sales Service
Dallas TULSA Los Angeles

Metrics Mean MeaSUREment

Write for 1926 Edition of the Orifice Meter Bulletin

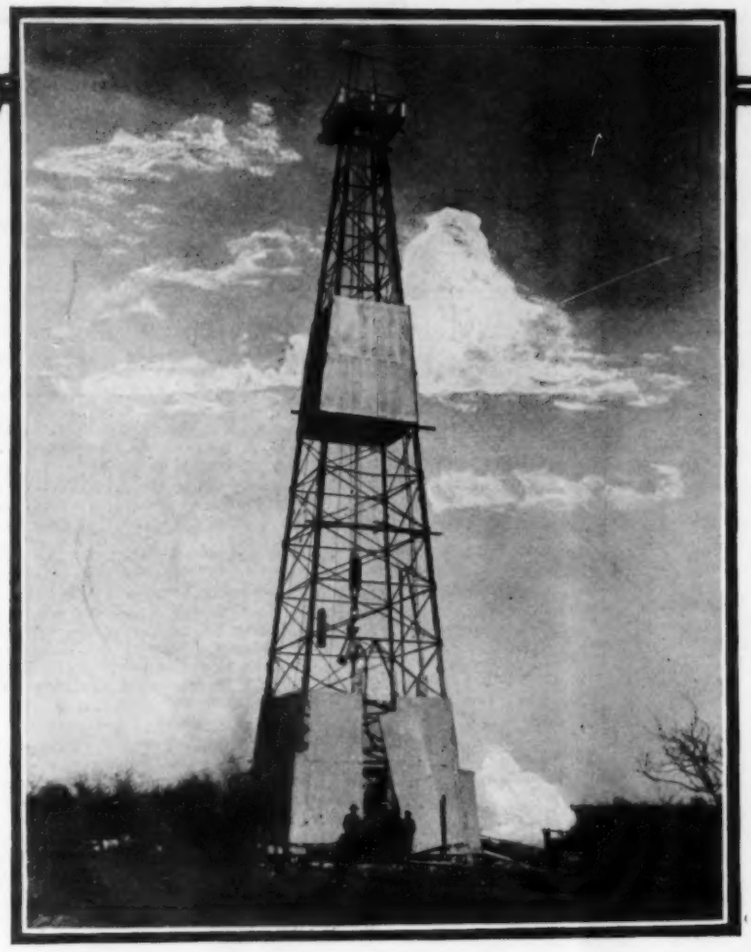
METRIC METAL WORKS

of the American Meter Company-Inc.

ERIE - PENNSYLVANIA - U-S-A

Just
EATS IT UP!
No Matter How "Mean" the Formation—
—THE STANDARD COLLAPSIBLE ROTARY DRILL AND CORE BARREL goes down through the various strata—FASTER—at a LOWER OPERATING COST—than ordinary bits.
Because—
—Its removable cutters are case-hardened in our own scientific laboratory furnaces attaining maximum hardness—yet they cost less NEW than redressing ordinary bits.
—Its collapsible design enables drillers to work INSIDE the drill stem—changing cutters in 10 to 20 minutes—taking cores in 30 to 60 minutes—and completing entire wells without wasting a single hour pulling long strings of drill pipe.
—Scientifically heat treated alloy-steels used throughout, reinforced by a burly drill collar, makes this drill stronger than any drill stem, and ready for the most severe operations.
—It is establishing new "speed records" in every field, and SAVES from 25% to 40% of the cost of drilling oil wells.
Write for Literature and Prices
THE STANDARD COLLAPSIBLE ROTARY DRILL AND CORE BARREL
O.M. CARTER
206-7-8 SCANLAN BLDG. HOUSTON TEXAS
W.T. HILTPOLD SALES AGENTS T.P. HEWITT

Say you saw it in The OIL WEEKLY



MOORE TUBULAR STEEL DERRICKS

Double Strength With Reinforcing Legs

Moore 96 foot Rotary Derrick with reinforcing legs. Lately used for test drilling in Archer County, Texas, completing the deepest test ever drilled with rotary in that territory. Stood the worst punishment without the slightest trouble. Another Moore derrick, now in use at Big Run, Pa., has drilled to a depth of 7060 feet, and is still going strong.

DEEP TESTS

In deep test drilling, the unexpected is always apt to happen. You will be prepared for every emergency if you use a Moore tubular derrick with pipe reinforcing legs. Such a derrick has nearly double the capacity of a single leg derrick, yet its first cost is very moderate.

After the well is completed, the whole derrick, or the reinforcing legs alone can be moved and used again and again on other locations for drilling or pulling casing.

For instance, the derrick illustrated above is shown in its third location, in Archer County, Texas. At one time, it supported the weight of 54 thribbles of 4-inch drill stem hanging in the derrick. On another occasion, the pipe was frozen and the derrick several times parted the 4-inch 12½ lb. drill stem. Such instances are typical of the giant strength of Moore Derricks with reinforcing legs.

LEE C. MOORE & CO., Inc.
Pittsburgh, Penna.

Tulsa, Okla.
Shreveport, La.
Casper, Wyo.
Dallas, Texas
Parkersburg, W. Va.

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A

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Aetna Ball Bearing Mfg. Co. 95
Ajax Iron Works . ..... *
Alco Oil Tool Co. ..... *
Aluminum Company of America ..... *
Amarillo Abstract Company 84
American Cable Co. . ..... *
American Roller Bearing Co. 7
American Telephone & Telegraph Co. ..... *
American Well Works . ..... *
Andrews Steel Company 97
Athey Truss Wheel Company . ..... *
Atmore Co., Robt. N. 53
Axelson Machine Company . ..... *

B

Baash-Ross Tool Company . ..... *
Baird Supply Company . ..... *
Baird Tool Works . . .. *
Baker Casing Shoe Company 88
Barnickel, Wm. S., Company 88
Becker Specialty Company . ..... *
Bessemer Gas Engine Company 4
Bridgeport Machine Company . ..6..... *
Buckeye Traction Ditcher Company . ..... *
Burns Tool Company . ..... *
Burt Corporation . ..... *
Butler Manufacturing Company . ..... *
Byron Jackson Pump Company . ..... *

C

Cameron Iron Works . ..... *
Carter, O. M. 18
Central Alloy Steel Corp. 87
Central Tube Company 87
Clark Bros. Company 54-55
Columbian Steel Tank Co.. ..... *
Columbus Sucker Rod Company, The ..... *
Continental Motors Corp. ..... *
Continental Supply Company 59
Crago Gear and Machine Works 80
Cyclone Fence Co. . ..... *

D

D & B Pump & Supply Company . ..... *
Darling Valve Manufacturing Company .... *
De La Vergne Machine Company . ..... *
Dunn Manufacturing Company . ..... *

E

Eagle Picher Lead Company . ..... *
Eastern Texas Electric Company 11
Eastern Torpedo of Ohio Company . ..... *
Eclipse Paint & Mfg. Company . ..... *
Elliott Core Drilling Company . ..... *
Emsco Derrick & Equipment Company .... *
Emsco Derrick & Equipment Co. of Texas.. *

F

Federal Supply Company ..... *
Fire Proof Tank Cover and Condenser Co... *
Fort Worth Laboratories 84
Franklin Valveless Engine Company 51
Frick-Reid Supply Co. 90

G

Gallup Map & Supply Co. 84
Garnder Governor Company 22
Gaso Pump & Burner Mfg. Company 3
General American Tank Car Corp. ..... *
General Electric Company . ..... *
Gott, H. P., Manufacturing Company ..... *
Goulds Pumps, Inc. 89
Graham Brothers . ..... *
Greenspon's Jos. Sons Iron and Steel Co... *
Guiberson Corporation 81
Gulf Coast Machine & Supply Co. ..... *
Gulf Refining Company 98

H

Halliburton Oil Well Cementing Co. ..... *
Hardway & Cathey 84
Harrisburg Pipe & Pipe Bending Co. ..... *
Hercules Motors Corporation . ..... *
Hercules Supply Company . ..... *
Heydrick Mapping Company 89
Hinderliter Tool Company . ..... *
Hirsch & Brown 84
Hope Engineering & Supplying Company .. *
Hopkins, Edwin B 92
Houston National Bank 97
Houston Pump & Supply Company . .... *
Hough Manufacturing Co., Charles N. .... *
Hughes Tool Company .....Back cover
Humble Oil & Refining Company 8

I

International Derrick & Equipment Co. .... *
International Supply Company . ..... *
International Vacuum Drilling & Coring Co. *
Iron King Manufacturing Company ..... *

J

Jarecki Manufacturing Company . ..... *
Jefferson Union Company . ..... *
Jensen Bros. Manufacturing Company 85
Johns-Manville, Inc. 5
Jones Company, The S. M. 85
Jones-McLaughlin, Inc. ..... *

K

Kansas City Hay Press Company 97
Kerotest Manufacturing Company . ..... *
Keystone Pipe & Supply Company 93

L

Lancaster & Allwine 92
Landis Machine Company.. ..... *
Larkin & Company . ..... *
Layne & Bowler . ..... *
Le Bus Rotary Tool Works 75
Leidecker Tool Company 6
Leonard, P. G. . ..... *
Lorraine Corporation . ..... *
Lucey Manufacturing Corporation 15
Ludlow Valve Manufacturing Company 93
Ludlum Steel Company 65
Lunkenheimer Company 9

M

M & V Tank Company 63
MacClatchie Mfg. Company . ..... *
Magnolia Petroleum Company . ..... *
Maloney Tank Mfg. Company . ..Front cover
Manzel Brothers Company . ..... *
Maverick, Phillip 84
McEvoy, J. H., & Company . ..... *
McIntosh & Seymour Corporation . ..... *
Meier Lubricating Co., The E. C. ..... *
Metric Metal Works 17
Mexia Planing Mill . ..... *
Mission Sales Company . ..... *
Morrisey Torpedo Company . ..... *
Moore, Lee C., & Company 19

N

National Pigments & Chemical Co. 95
National Supply Companies 12
National Transit Pump & Machine Co. 87
National Tube Company . ..... *
National Turnbuckle Derrick Co. ..... *
Norris Brothers, Inc. 83
Northrup Equipment Company . ..... *
Norvell-Wilder Hardware Company . ..... *
Nuttall Company, R. D. . ..... *

O

Oil City Iron Works . ..... *
Oil Country Specialties Mfg. Company . .... *
Oil Field Tool Company . ..... *
Oilwell Accessories Corporation . ..... *
Oil Well Supply Company 24

P

Parkersburg Rig & Reel Company . ..... *
Pattin Bros. Company 50
Peden Iron & Steel Company 86
Petroleum Iron Works . ..... *
Petroleum Rectifying Company . ..... *
Petroleum Register, The . ..... *
Pittsburgh Steel Products Co. .....
..... Inside back cover
Price, W. Armstrong 84

R

Ranney Oil Mining Company 84
Ratigan, J. P. . ..... *
Reading Iron Company . ..... *
Reed Air Filter Company . ..... *
Reed Roller Bit Company . Inside front cover
Regan Forge & Engineering Company 10
Reid, Joseph, Gas ngine Company . ..... *
Republic Supply Company . ..... *
Rex Supply Company 89

S

Sargent Engineering Corp. . ..... *
Shaffer, J. E., Company . ..... *
Shaffer Specialty Co. . ..... *
Sinclair Refining Company 57
Sivyer Steel Casting Company . ..... *
Smith, H. C., Manufacturing Company .... *
Howard Smith Company 93
Smith Separator Company 95
South Chester Tube Company . ..... *
Southern Brass Mfg. & Plating Co. ..... *
Southern Engine & Pump Company ..... *
Spang & Company . ..... *
Standard Rail & Steel Company . ..... *
Star Drilling Machine Company, The ..... *
States Engineering Company . ..... *
Steiner, Dr. George 89
Stone, Jesse R. 84
Sullivan Machinery Company . ..... *
Sullivan Co., The . ..... *

T

Taubman Supply Corp. . ..... *
The Texas Company . ..... *
Templeton, Kenly & Co., Ltd. ..... *
Texas Cyclone Fence Company . ..... *
Texas Oil Pump Co. 86
Titusville Iron Works, The . ..... *
Trimont Mfg. Co. . ..... *
Trinity Portland Cement Company 14
Trumble Gas Trap Company ..... *
Tyler Tube & Pipe Company, The 97

U

Union Machine Co. . ..... *
United Iron Works 16
United States Torpedo Company 89

W

Waldron Corporation, John . ..... *
Ward Chemical Company . ..... *
Waukesha Motor Company . ..... *
Webster, C. W. 92
Westcott & Greis, Inc. 21
Wheeling Steel Corporation 66
Wickwire-Spencer Steel Company, Inc. 73
Williams & Co., J. H. ..... *
Williamsport Wire Rope Company ..... *
Wilson Oil Tools Corporation 92
W-K-M Company . ..... *

Y

Yale & Towne Company . ..... *
Young Drilling Engine Company, W. T. .... *

Z

Zelnicker, Walter A. 84
Zero Hour Torpedo Co. 13

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TABLE OF CONTENTS

FARISH SEES NO REASON FOR CONCERN OVER FUTURE SUPPLY 26

LOWER PRICES EXTENDED IN PANHANDLE AND WEST TEXAS AREAS 27
By Kent Ridley

SEMINOLE TO REACH 150,000 BARRELS DECEMBER 1 27
By Grady Triplett

NEW CRANE COUNTY FIELDS MAY RIVAL BIG LAKE PRODUCTION 28
By H. H. King

SPARK FROM TUBING STARTS SOUR LAKE FIRE 30
By Wallace Davis

RATIONALIZATION OF RUSSIAN OIL INDUSTRY PROGRESSES RAPIDLY 31
By A. R. McTee

VENTURA AVENUE PRODUCTION GOING AHEAD OF PREDICTIONS 33
By George Reid

ONE OF MANY PROBLEMS FOUND IN TORSION BALANCE WORK 35
By John F. Weinzierl

ANALYSIS SHOWS PERMIAN PRODUCING ONE-THIRD OF TEXAS OIL 38
By Richard A. Jones

TANK CAR MOVEMENT FROM PANHANDLE GAINS IN VOLUME 42
By H. H. King

RECORD OF AUTOMATIC DRIVE GIVEN IN WELL CHARTS 43
By Rufus J. Pilcher

THREE COMPLETIONS REVIVE INTEREST IN LIBERTY EXTENSION 50

FILING DEPARTMENT HAS IMPORTANT FUNCTION IN PRESERVING DRILLING RECORDS 69
By T. L. Fontaine

IMPROVED DRILLING AND PRODUCTION METHODS IN GULF COAST FIELDS 84
By Joe H. Russell

PERSONAL MENTION 34
CRUDE PRICE QUOTATIONS 56
PRODUCTION FIGURES FOR PAST WEEK 61
PRODUCTION FIGURES FOR 1926 61
COMPLETIONS FOR PAST WEEK 62
WILDCAT DRILLING REPORTS 71
PERMITS FOR NEW WELLS 78
NEW EQUIPMENT FOR PRODUCERS 91
MANUFACTURERS NOTES 92
SQUEAKS FROM THE BULL WHEEL 96

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WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

Seminole City to Reach 150,000 Barrels December First

Present output restricted to 82,164 barrels by handling facilities; many pipe lines building

By GRADY TRIPLETT
Staff Representative

SEMINOLE EXTENDED

Tulsa, Oklahoma, Oct. 27.—Seminole City production was again extended a quarter of a mile south by Sinclair Oil and Gas Company's Cudjo 1, in the northeast corner of the northwest 35-9-6, which came in flowing 200 barrels an hour. The Wilcox sand was topped at 3989 feet and drilled to 3997. The Wilcox is higher in this well than any other in the field.

Tulsa, Okla.—Pipe line facilities for handling 150,000 barrels daily will be in operation for the Seminole City field by December 1. Part of this already is complete. But the lines now serving the district are not sufficient to handle present output, which was 82,164 barrels October 24. In a few instances oil has been lost throug hlack of pipe lines and tankage.

The Oklahoma Pipe Line Company (Standard Oil Company of New Jersey) has the largest pipe line outlay in prospect for the field. This concern has one four-inch line and one six-inch line in operation. Its construction program calls for three other lines, one four-inch, one six-inch and one eight-inch.

The Oklahoma Pipe Line Company will be able to handle 50,000 barrels daily when all its lines are complete.

The Prairie Pipe Line Company has one six-inch line operating and will lay a second line of that size. The two will allow runs of 32,000 barrels daily.

Gulf Pipe Line Company of Oklahoma will lay a second line, an eight-inch. This company has a four-inch line under construction. The two will give capacity of 35,000 barrels daily.

The latest line to be completed is that of the Magnolia Pipe Line Company, whose new six-inch line received its first oil last Saturday.

Shaffer Oil & Refining Company has announced a four-inch line to be put into the field, and Barnsdall Refining Company will build a line from its Okmulgee refinery. This line will be six-inch and 50 miles long. Its capacity will be 15,000 barrels daily.

Sinclair Pipe Line Company has two four-inch lines in operation and will lay a third.

The Ozark Pipe Line Company is laying a four-inch line. The Independent Oil & Gas Company has a four-inch line under construction from the field over to the Papoose pump station. In addition the Independent is building a loading rack on the Rock Island railroad at Seminole City.

Ready by December

None of these lines involves extensive construction, which leads to the conclusion that December 1 should see the above facilities in operation. It is possible that still other lines will be announced, although onen is now in prospect.

Lack of sufficient pipe lines has made it necessary to shut down some drilling wells, as well as cause the loss of small amounts of oil from producing wells. The Independent-Garland partnership lease lost 1,500 barrels through lack of outlet.

A break in the Oklahoma Pipe Line Company's line caused a slight loss to the Mid-Continent Petroleum Corporation. Indian Territory Illuminating Oil Company and the Pure Oil Company were hampered but no loss of oil was reported.

Well No. 3 Bowlegs of the Indian Territory Illuminating Oil Company was shut down on top of the Wilcox sand, topped at 4109 feet, to await the provision of outlet for the oil. Pure Oil Company's No. 1 Strothers has the top of the Wilcox, with oil standing in the hole, but will not complete the well until assured of outlet.

Output Equals Facilities

Indications are that the output of the pool will be equal to pipe line capacity by the time the present construction program is complete. Present production is in excess of what was at first considered the possible peak for the pool. Now, however, predictions are that the area will produce 150,000 barrels daily, and December 1 is considered a date far enough removed to allow production to climb to that figure.

Lack of pipe line facilities may hold wells back a few days on top of the sand but there is no possibility that this will have any check on drilling, where wells are not near the sand.

The way Wilcox sand wells are holding up is the chief reason for predictions of a peak output of 150,000 barrels daily. Of the 82,164 barrels produced in the whole Seminole area Sunday, 18 Wilcox sand wells flowed 51,894 barrels. One of these wells is in the Searight area, not considered a part of the Seminole City pool.

The 18 Wilcox sand wells had average output of 2883 barrels each October 24. A few are flowing less than 1000 barrels each, these being edge wells. So the larger Wilcox sand wells have a high average yield, which is being maintained over such a period that students of the area look on 150,000 as well within possibilities of the pool.

The fact that wells south and west of the Wilcox discovery wells are running high on the structure indicates a large producing area. This possibility also lends evidence to the contention of the predicted high yield.

Two more Wilcox sand wells have been added to the field over the end of the week. One of these is the Gypsy Oil Company's No. 1 Fixico in the southwest corner of the northwest of the northeast of section 26-9-6, which topped the formation at 4143 feet, found first oil at 4151 feet and was drilled two feet deeper, where it began flowing 72 barrels an hour Saturday night.

The Gypsy well has been closely watched for several weeks. Caving hole prevented its completion for a long period. It was feared that the hole would be lost. Finally, however, the casing was put through and the well turned into a producer.

One location west of the Gypsy well, the Tidal-Osage Oil Company completed 3-D Fixico in the southeast corner of the northeast of the northwest of section 26-9-6 for initial output of 130 barrels an hour. It topped the Wilcox sand at 4110 feet and was drilled to 4119½ feet.

A dozen other Wilcox sand wells are due for completion by November 1. Lack of pipe lines and mishaps may retard some of these but this will not remove them from doing their part toward running peak output to a high figure by December 1.

Farish Sees No Reason for Concern Over Future Oil Supply

A. P. I. president talks before Conference on Education and Industry at Chicago University

Chicago, Ill.—In his speech before the Conference on Education and Industry, held at the Chicago University, October 27, W. S. Farish, president of the American Petroleum Institute, predicts little change for the American petroleum industry in its future development. Barring general industrial depression, the industry will function about as it has this year, in the opinion of the speaker.

Quoting from the text of Mr. Farish's address, we find him stating that, "At times, due to the rapid development of new pools, we will have an over supply, with crude and perhaps products going to storage. Such conditions will be reflected in the market value of our products. At other times, we will be drawing on stocks of crude and products, and this condition will, in turn, be reflected in the market value of crude and products. In other words, always barring general industrial depression, over this period the oil industry will function about as it has this year; profits generally that permit us to live, large profits nowhere, and on the whole less profit than a thoroughly healthy industry should enjoy."

Mr. Farish sees no immediate shortage in the crude supply during coming generations. "Looking further ahead, over the next decade, or the next generation, or the next century," he says, "I personally continue to see adequate supplise of motor fuel for generation after generation. I am one of a number in the petroleum industry which holds that our supply of well oil itself will continue adequately to meet the essential requirements (by essential requirements I mean motor fuel and lubricants) of our nation for generations. I believe it will also remain the cheapest source of these products. But, if I prove to be mistaken, if well oil fails in the future to constitute an ample supply, or if it becomes an expensive supply, we are certainly already in position to rest assured that we can make a motor fuel similar to gasoline from raw materials such as oil shale and coal which are available to us in almost unlimited quantities. Oil shale is already a thoroughly established source of motor fuel and lubricants. In Germany, brown coal has also been processed to yield a motor fuel on a large scale. It is my firm conviction that these practices will be placed on sound commercial basis, just as soon as gasoline prices advance to any point materially higher than our prevailing average at present.

Substitute Fuels

"If gasoline from well oil becomes expensive, this substitute fuel will come into use. There is no possibility, then, of our supply failing. There is only the question as to when and at what prices other fuels than gasoline from well oil will be utilized. Well oil supplies cannot fail suddenly. As yet, of course, the whole tendency is toward increase, but when the supply does begin to dwindle, as eventually it must, the decrease will be extremely gradual, and at that time, equally gradually, other motor fuels will begin to come into the market to supplement the gasoline supply."

Speaking more in detail of the various problems within the petroleum industry, Mr. Farish made many interesting observations. While he gave the industry credit for all it has accomplished, he emphasized many of its internal weaknesses. He pointed out that "To one thoroughly familiar with it, the industry is singularly weak and helpless in certain respects. Its business is in the hands of thousands of independent, self-centered enterprises. Competition is intense and totally unreasoning so far as the general welfare of the industry is concerned. The petroleum industry lacks cohesion. It lacks intelligent direction. It is often hopelessly at cross purposes within itself, and altogether, it suffers piteously from the lack of coordinated effort.

"The foregoing statement is not made in a spirit of criticism or of censure. No individual within the industry, or out of it, is to blame for our troubles. They are due to certain inherent weakness in our present industrial structure. Our situation is far from hopeless, however, and I have full confidence that we shall eventually work out a satisfactory solution of our problems."

Taxation

Taxation is one of the serious handicaps of the petroleum industry, according to the speaker. He explained that "In addition to direct ad valorem taxes, such as are assessed against property in general and against other industries, the petroleum industry, in most states, pays a special tax on every barrel of oil produced, known as the gross production tax. In many states also there is a heavy special tax on every gallon of gasoline sold; part of this tax is paid by the industry, although it is popularly assumed that the industry is able to pass it all on to the public. Moreover, the expense of collecting this tax is also borne by the industry. Oil companies generally pay more taxes than dividends and a number of them pay taxes double the amount of their dividends."

The chief obstacle to internal progress however, in the speaker's opinion, is excessive competition. To this cause he assigns the heavy overproduction of the past three years. "Competition in petroleum is intense because the returns from successful discoveries are often colossal," he says. "The element of chance, and the possible large reward, make the search for oil pools just as attractive to venturesome spirits today as was the lure of California gold in 1849, and the actual cash investment of the average wildcatter is hardly more than the grubstake that the 'forty-niner' required."

This situation has a bad effect on the industry, in the long run, as was stated: "Many of these small ventures are financed by stock sales to the general public, particularly those which are of too little merit to be floated within the industry. In the aggregate millions of dollars from small investors have been spent in this way, much of which was lost or squandered. The industry, in consequence, has to contend, not only with the added competition, but also with the ill-will of the public which naturally charges its unhappy experience to the industry at large."

Duplication of effort in the manufacturing and marketing of petroleum products also results from excessive competition, it was emphasized.

Causes of Overproduction

Another cause responsible for overproduction is the law regarding petroleum. Recognizing that petroleum in its natural state underground is a fugitive mineral, and that it may move through its natural reservoir from one place to another, the law vests the title to it in the owner of the surface, but only after the owner has reduced the oil to actual possession by bringing it to the surface through wells drilled on his land.

Thus as a result of the law many new fields are developed from chance discoveries on small tracts of land. Intensive drilling following such discoveries is inevitable, as brought out by

the speaker, just as is overproduction. In such cases there is also enormous waste of capital resulting from duplication of handling facilities, which in the end places an extreme burden on the industry.

"The only practical method of preventing overproduction," in the mind of Mr. Farish, "has been to reduce the price of the crude. This method is effective up to a certain point, but fails where extremely rich or extensive production is obtanied, because in such cases opreators are all the more frantically driven to get their oil out of the ground before a competitor captures it, and since they can still make a profit on their flush oil, low prices do not deter them."

The report of the Federal Oil Conservation Commission is encouraging in this connection as the speaker sees it. "The Conservation Commission recommends a policy of conservation through cooperation between government and industry and between different units within the industry, which every oil man will approve.

"Heretofore, the industry itself has hardly been in position to take the initiative in an effort to modify the laws against combinations and control of production, which have rendered it helpless in the face of its problems. Further education, both within the industry and outside of it, as to our real problems, seems likely to make possible coordinated effort within the industry, and a more tolerant and liberal attitude on the part of our government. Once assured of these, I am fully confident that we can work out our problems, and become, in fact, the unified, well-directed industrial power that, in the interest of national welfare, we ought to be."

Marland Gets Oil Zone Deeper at Seal Beach

Marland Oil Company reported on the morning of October 25 having found an oil zone at Seal Beach in Bixby No. 3 at 4393 feet, and Bixby No. 4 at 4406 feet. This news relieves the anxiety of the producing fraternity in the Los Angeles Basin. Operators had become apprehensive over the fact that the above two tests had passed the production level of Marland's Bixby No. 2, the discovery well, which is still flowing its 1800 barrels every day from its depth of 4227 feet. Marland's Sellover No. 1, which had been expected as the next completion, and which is located 1500 feet west of Bixby No. 2, has passed up the production level and is drilling ahead through gray sand at 4500 feet, having had no showing at 4200 feet or deeper. Standard Oil Company is drilling ahead in San Gabriel Improvement No. 1 at 4256 feet and has reported nothing encouraging.

It is estimated that various companies have expended something close to two million dollars in and around Seal Beach in the drilling of 18 dry holes and the successful completion of only one well and the two additional reported above.

It is very evident that the Union Oil Company intends to follow up its development program in the Dominguez field, for in addition to the wells at present underway on its Carson and Hellman properties, the Union is making preparations to drill two new wells on the Callender lease. The new wells are the Callender Nos. 15 and 16. On the Carson property the Union has its Carson No. 3 drilled to 4647 feet. On the Callender lease its Callender No. 3 is drilling at 3889 feet. Callender No. 4 at 4770 feet, and Callender No. 5 at 5435 feet. Callender No. 15 which is a new well started about two weeks ago, is reported at 2000 feet. The Shell Company is the only other active operator in the Dominguez field and this company has its Reyes No. 35 rigged up and ready to start drilling.

Lower Prices Extended in Panhandle and West Texas Areas

Humble changes classifications and posts slight reductions for several crudes

By KENT RIDLEY
Staff Representative

THAT refiners and marketers are agreed in conceding that a general crude price reduction is inevitable is revealed in the present market for gasoline. New Navy is quoted at 9½ to 9¾ and no volume of business is being offered at these figures, while shipping instructions demanding prompt movement indicate that the buyers are holding off with low stocks in anticipation of the crude cut and consequent reduction in refinery quotations. However, it appears that the offerings of the refiners are based on what they expect to get for gasoline after the crude reduction, and should the crude market be cut generally gasoline will remain practically where it is.

Demand for fuel oil is strong, but kerosene is not faring so well.

Crude reductions announced during the week have only effected the isolated districts in the Texas Panhandle district where production in excess of handling facilities and distance from market is a factor. Whether or not the Mid-Continent price will be reduced remains a matter of uncertainty, but no one would be surprised at a reduction at any time.

Crude price reductions in outlying district in the Texas Panhandle and West Texas were posted Monday morning by the Humble Oil & Refining Company. Humble announced that hereafter its crude purchases in Wheeler County would be at a flat price of $1.25 per barrel, and a 25 cents reduction was made on each gravity scale price posted by Humble for Gray County crude. Most of the Gray County crude is better than 41 gravity and a portion of that produced in Wheeler county is equally as good. This grade has been netting the producers $2.00 per barrel on Humble's old schedule. Humble did not alter its price on Carson-Hutchinson County crude, which has been posted at $1.25 since September 23.

Humble announced its first official crude postings in the Crane-Upton County section of West Texas Monday, and adopted the price scale being used by the Kay County Gas Company. This price scale ranges from 80 cents for below 26 to $1.35 for 36 gravity and above, with most of the crude testing 29 gravity, or $1.00 per barrel. Humble also applied this price schedule to its crude purchases in the World pool, Crockett County, which has heretofore been on the Mid-Continent gravity scale. Kay County Gas Company is also paying Mid-Continent gravity scale prices in the latter pool. Humble Pipe Line Company is completing its combination six and eight-inch pipe line from the Big Lake field to the Crane-Upton district, and the new postings are to cover the crude purchased for this line.

A fresh outbreak of crude price cutting in Hutchinson County is following the increase of daily production to a new peak of 146,230 barrels, and 158,970 barrels daily for the Panhandle district. Two separate deals were closed last week by different producers with Mid-Continent refiners for 25,000 barrels of crude at $1.15 per barrel at the well, and and a number of other deals are pending since the completion of direct railroad service to the heart of the field. This permits Mid-Continent refiners to ship out in tank cars without having to pay a high gathering and car loading charge. The Santa Fe Railroad is reported to have moved out 615 tank cars of crude from Hutchinson County during the week ending October 21, exclusively of the heavy shipments made daily from racks on its main line between Amarillo and Pampa. The movement of crude in tank cars from the Isom branch of the Santa Fe in Hutchinson County will not reach its maximum for some weeks hence, as only a few of the 18 separate car rack owners on this spur line have been able to complete their racks.

New Crane County Fields Will Rival Big Lake Production

Gulf Production Company holds lease on large drilling block in West Texas

San Angelo, Texas—The Gulf-McElroy and Church-Fields oil producing areas in eastern Crane County are being rated as the forerunners of another major field of the Big Lake type in West Texas, with the flush production at present centering on the Gulf-McElroy area, located about five miles southeast of the Church-Fields. These two producing fields have a combined daily output of about 4,000 barrels of oil from 10 flowing and pumping wells, and the oil production is encountered in layers of sandy-dolomite, as is the case in the Big Lake field.

The Gulf-McElroy field jumped from 250 to more than 3,000 barrels daily early last week, when Gulf Production Company drilled in three tests and opened up two completions that had been held back for storage, while W. H. "Bill" Dunning added 960 barrels by the completion of his first test on a 160-acre lease offsetting Gulf's acreage. The completion of the first of a pair of 80,000 barrel steel tanks being constructed on the McElroy property by Gulf afforded storage facilites, but the wells have not been completely drilled in and opened up, owing to inadequate field gathering system to handle the oil as produced. Additinal pumps and larger flow lines to the tank will be available for use by the middle of the present week. Dunning's production is being run for purchase by the Humble Pipe Line Company.

The Church-Fields area was uncovered in April, 1926, by a group of individuals and a company with an initial production of 190 barrels swabbing and flowing at 3029-40 feet, and after the discovery was made Magnolia acquired a one-sixth interest in the 40 acres on which the well was drilled and about 1,220 acres of nearby leases on University of Texas fee land from Church & Fields, while the Tidal Oil Company later bought a one-eighth interest in the discovery lease along with other nearby leases from Turman & Maxwell. Pennock Oil Company holds a one-half interest in the discovery lease. This discovery has since resulted in a west offset completion by Tidal and two producers in a line to the southeast by Magnolia et al and by Magnolia individually. The latter two producers are the best completions, with a daily production of 90 barrels each. Magnolia's University-O'Keefe 1, located in the northwest corner of section 38, is flowing natural, while Magnolia et al's University-Church 2 flows while pumping.

San Angelo, Texas—The prolificness of the sandy lime pay in the Gulf-McElroy field was fully illustrated late Monday, when Gulf's Crier McElroy 1 increased its flow to 120 barrels per hour fater being deepened nine feet to a total depth of 2749 feet. This well was ! flowing about 1000 barrels daily before deepening. The output of Gulf's other wells had to be pinched in in order to handle the flow from the big producer, and negotiations are pending for pipe line connections with outside crude buyers, owing to Gulf having only one large steel tank available for use.

No Complete Test

The production of the pay in the Church-Fields area has not been put to a fair test, as the present completed wells have not been drilled through the pay. However, the additional tests being drilled by Prairie Oil & Gas Company, Gulf Production Company, Tidal and the Simms Oil Company-Atlantic Oil Producing Company joint interests, making a total of 12 drilling and getting under way, will throw some interesting light on the possibilities of the field.

Prairie is also starting a test about five miles west of the Church-Fields area on acreage owned jointly with J. D. Collett & O'Keefe. Other than two necessary offsets to oil producers, the new development in the Church-Fields area is confined to the south and southwest of production.

Humble's J. T. McElroy 1, located across the line in Upton County and about three miles northeast of production, has been ordered plugged at a total depth of 3974 feet, after logging the top of the salt 391 feet lower and the top of the big lime 490 feet lower than the salt and lime horizons in the Church-Fields' discovery well, as the accompanying table indicates. The Humble test idicates a sharp dip of the structure on the east flank of the producing field, and with such information at hand the tendency will be to stay to the west and south of present production with early development work.

The oil in the Church-Fields area ranges from 31 to 32 gravity, with only a small volume of gas pressure.

Kay County Gas Company and

LOG RECORD OF CHURCH-FIELDS WELLS

The log record on completed wells and drilling tests in the McElroy and Church-Fields field in northeastern Crane County is listed below:

Operator—	Elevation	Top Salt	Top Lime	Lime Pay	Total Depth	Date Comp.	Initial Prod.	Present Prod.
W. H. Dunning's								
Crier-McElroy's 1	2582	958	2643	2753-2802	2802	10-21-26	960	900
Gulf Production Co.'s								
Crier-McElroy 1	2597	990	2658	2699-2740	2740	10-20-26	1390	1195
Crier-McElroy 2	2595	956	2660	2728-2820	2820	10-20-26	650	580
Crier-McElroy 3	2601	965	2668	2741-2812	2812	10-23-26	165	160
J. T. McElroy 1	2592	1000	2661	2728-50	2750	7-22-26	600	575
J. T. McElroy 2-A	2601	1000	....	....-....	1135		Drilling	
J. T. McElroy 3	2582	959	2647	2721-2818	2818	9- 2-26	260	280
University-Lassiter 1	2608	1163	....	....-....	2075		Drilling	
Humble Oil & Ref. Co.'s								
J. T. McElroy 1	2624	1560	3438	....-....	3974	Dry & abn		
Magnolia Pet. Co. et al's								
University-Harwick 1	2559	110	....	3029-40	3040	4-19-26	190	75
University-Church 1	2601	1145	2925	3001-27	3038	9-28-26	185	90
University-Church 2	2597	1165	2937					
Magnolia Pet. Co.'s				....-....	1475		Drilling	
University-O'Keefe 1	2603	1170	2893	2982-3051	3051	9- 1-26	165	90
University-O'Keefe 2	2623	1180	....	....-....	2440		Drilling	
Prairie Oil & Gas Co.s								
University 1	2590	1140	....	....-....	1510		Drilling	
University 2	2591	1148	....	....-....	1400		Drilling	
Simms & Atlantic's								
University 1	2588	....	....	....-....	400		Drilling	
Tidal Oil Co. et al's								
University 1-B	2585	1135	2903	3013-50	3050	9- 6-26	155	60
University 2-B	...	....	....	....-....	440		Drilling	
University 1-C	...	....	....	....-....	1120		Drilling	
Totals					10 wells		4720	4005

Humble are buying the current production.

Gulf Has Large Lease

The Gulf Production Company brought in the discovery well on the J. T. McElroy ranch June 30, 1926, but started actual drilling on the test prior to the Church-Fields discovery to the northwest. Gulf's discovery well was registered as a completion on July 22 with a natural flow of 600 barrels from pay at 2728-50 feet, but was pinched in to less than a third of the maximum flow for storage. Gulf obtained this wildcat block of leases earlier in the year from W. H. Dunning for a cash consideration of about $80,000, with Dunning contracting to drill the first test free, if a failure. Gulf obtained approximately 18,000 acres lying in an almost solid block, extending from the Church-Fields area down to the Hurdle district, centering on the Crane-Upton County line, while Dunning held out four quarter sections, including one offset quarter section for his personal interest. Other than the acreage held by Dunning, Gulf apparently has as much lease protection around the first group of completions as has been held by any company in West Texas since the Big Lake field was discovered near the center of a 64-square mile block.

Dunning's deal on the J. T.McElroy ranch, which lies mostly in Upton County, with about 20 sections extending over in Crane County is one of the oustanding leases completed in West Texas by an individual. Dunning acquired leases on about 80 sections of land in the McElroy ranch for the drilling of three 3500-foot tests, and no cash consideration. The first test was assumed by Gulf through the purchase of the 18,000 acre block, which now promises to become the second Big Lake field of West Texas, and another test was contracted by Humble after the Church-Fields strike. Humble is reported to have paid Dunning $150,000 cash for leases on 5,120 acres, with several sections adjoining the Church-Fields block, and Dunning agreed to drill a 3500-foot test free of charge on this block. Dunnning has two other wildcat locations staked on the McElroy ranch in Upton County, and will start on same shortly.

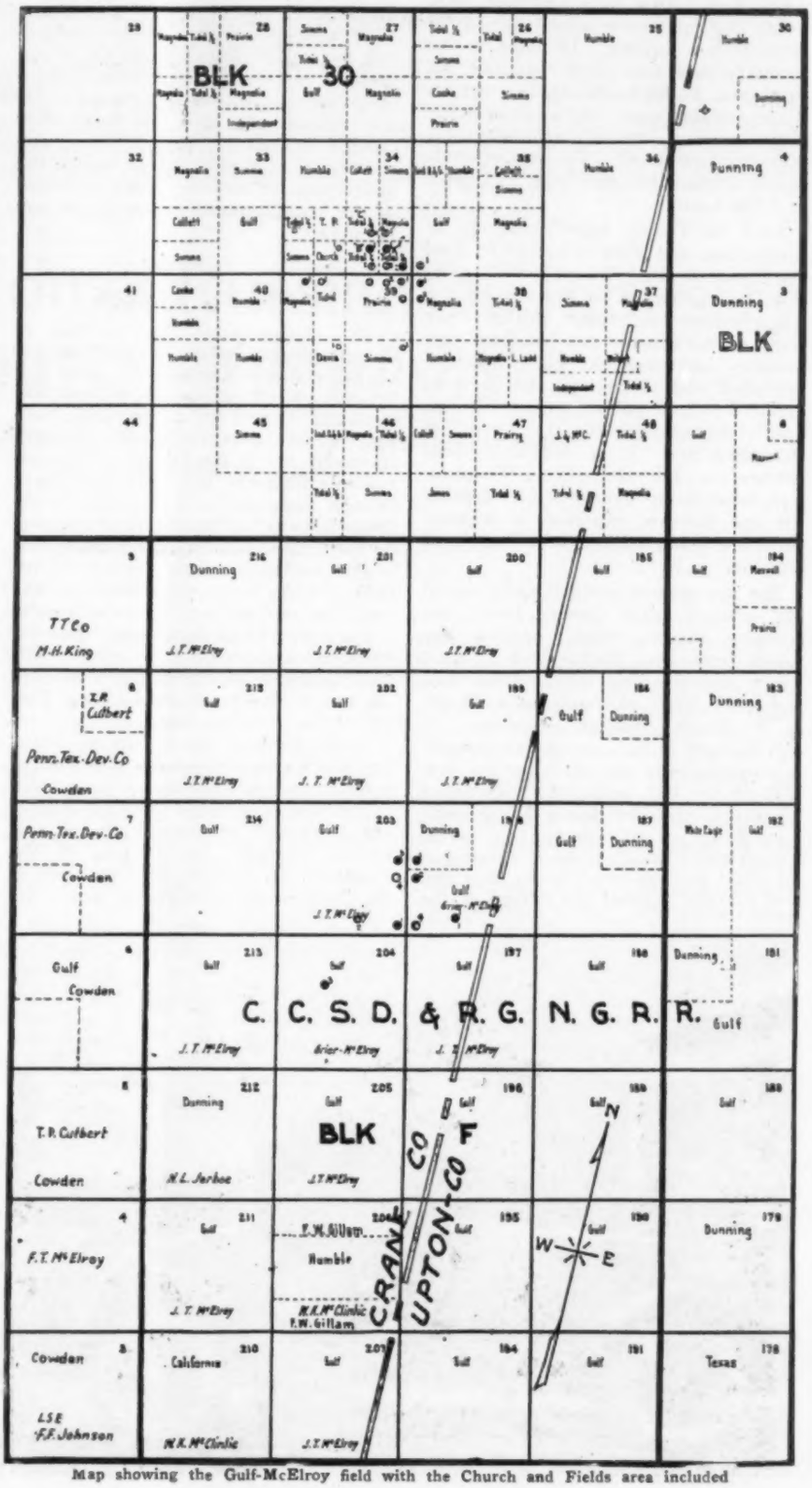
Flow of 1390 Barrels

Gulf's Crier-McElroy 1, located about a half mile east of the discovery well, is the largest producer in the Gulf-McElroy field. This producer flowed 1,390 barrels natural when drilled 82 feet into the big lime to a total depth of 2740 feet, and began making oil when 41 feet in the lime. It is not as deep in the lime as the other producers, and could be carried deeper into the pay without risking water trouble. Gulf's Crier-McElroy 2 flowed 650 barrels after making a 160-foot penetration of the big lime to a total depth of 2820 feet, with the production slightly pinched owing to limited pumps for handling the oil to storage.

Gulf's Crier-McElroy 3, which made 165 barrels by heads early this week after taking 144 feet of lime formation to a total depth of 2812 feet, will be deepened late this week. This well began flowing by heads 2800 feet, while the first show of oil was encountered at 2741 feet.

The crude being produced in the Gulf-McElroy field is of a better grade than any of the oil produced in commercial quantities in West Texas, exclusive of the Big Lake field, and the gravity ranged from 34.4 to 34.9 degrees (corrected). An ample gas pressure to afford a good kick behind

(Continued on page 46.)



Map showing the Gulf-McElroy field with the Church and Fields area included

Spark From Tubing Starts Sour Lake Fire

By WALLACE DAVIS

Houston, Texas—Fire, originating from a spark believed to have been caused from friction while tubing was being made up on the Humphreys Corporation's Bashara B-3 at Sour Lake, killed two men and destroyed crude and equipment valued roughly at $200,000 last Sunday. Included in the property loss was five derricks, six 5,000 and 10,000-barrel tanks, two or more drilling rigs and considerable miscellaneous material, including some pumping equipment. The loss in crude is not known, but has been estimated at 7,500 barrels.

Fred B. Tough, superintendent of production, and Tom Chambless, field employee for the Humphreys Corporation, were burned to death instantly, when a flow tank, near which they were working after the fire had apparently been brought under control, exploded and threw oil for several hundred feet, engulfing them. Ed Duhon, field manager for the Theis Oil Company, and J. S. Leleaux, field worker for the Humphreys Corporation, were badly burned while fighting the fire, but are expected to recover. Both are being treated in a Beaumont hospital.

The fire strated early Sunday morning, when a spark caused from the scraping of the tubing ignited gas fumes from the Bashara B-3 well, which was heading at the time, and was not entirely extinguished until after 6 o'clock Sunday afternoon. It was brought under control and thought to be practically put out after the derrick of the B-3 well was destroyed when it is thought that a flying spark ignited oil in the flow tank where Tough and Chambless were working in an effort to stop leaks in the flow line and thereby prevent the spread of the blaze. It was the explosion of this tank that spread the fire to other nearby tanks and wells.

The Humphreys Corporation lost one derrick, Gulf Production Company, two, Eunice & Carpenter one, and J. F. Bashara, one.

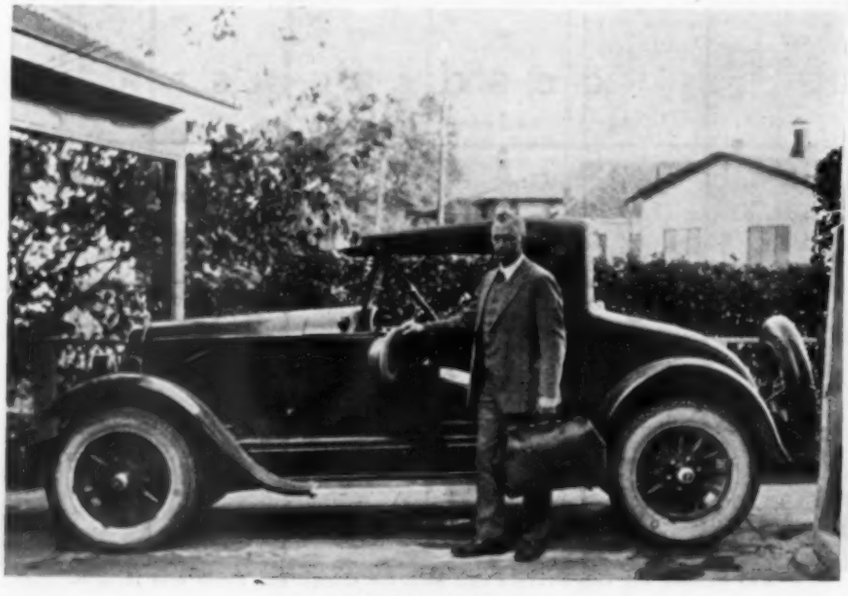
As a result of the fire progress in the new Sour Lake extension is expected to be considerably retarded temporarily. Reconstruction was begun immediately after the ruins were cleared enough to permit work, and the laying of flow lines to handle the production of flowing wells damaged in the conflagration was under way Monday.

Fred B. Tough

The picture below shows Fred B. Tough, production superintendent for the Humphreys Corporation, who lost his life while trying to prevent the spread of the field fire at Sour Lake, Sunday, October 24. Under Mr. Tough's leadership fire at the Humphreys Corporation's Bashara B-3 well had been brought under control and practically extinguished, and he had set about to cover up dangerous leaks in nearby tanks that might possibly endanger the rest of the field. At the time of his death he was shoveling mud and sand on an oil leak in a flow line, when a flying spark ignited a 500-barrel tank not 15 feet away. The tank exploded, engulfing him in burning oil and at the same time killing Tom Chambless, a fellow worker.

In the death of Mr. Tough the industry loses a valuable leader, a conscientious worker and his associates a staunch friend. The Humphreys Corporation loses one of its most capable officials and progressive workers. In speaking of Mr. Tough, F. W. DeWolf, chief geologist of the Humphreys Corporation said: "He was the heroic type of fellow who never sent an employee where he was afraid to go personally, and he played the game to the end, not, I think, rashly, but with commendable force and courage. His attitude toward the management and toward his subordinates was loyal, intelligent and courageous." Such characteristics were being well demonstrated at the time of Mr. Tough's death at Sour Lake.

Mr. Tough was born in Baltimore December 3, 1885. He completed an academic course at Johns Hopkins University, and was a graduate of the Columbia School of Mines in 1910. His first work in the oil industry was as resident geologist for the Kern Trading & Oil Company, subsidiary of the Southern Pacific Railroad, at Bakersfield, California. In 1917 he went with the U. S. Bureau of Mines, and was later made superintendent of drilling operations on government lands for the Bureau in the Mountain States, with headquarters at Denver. His efficiency in this position later brought his promotion to chief petroleum engineer of the Bureau of Mines, with headquarters at Washington, D. C. He resigned this position in the fall of 1925 to join the Humphreys Corporation as production superintendent.

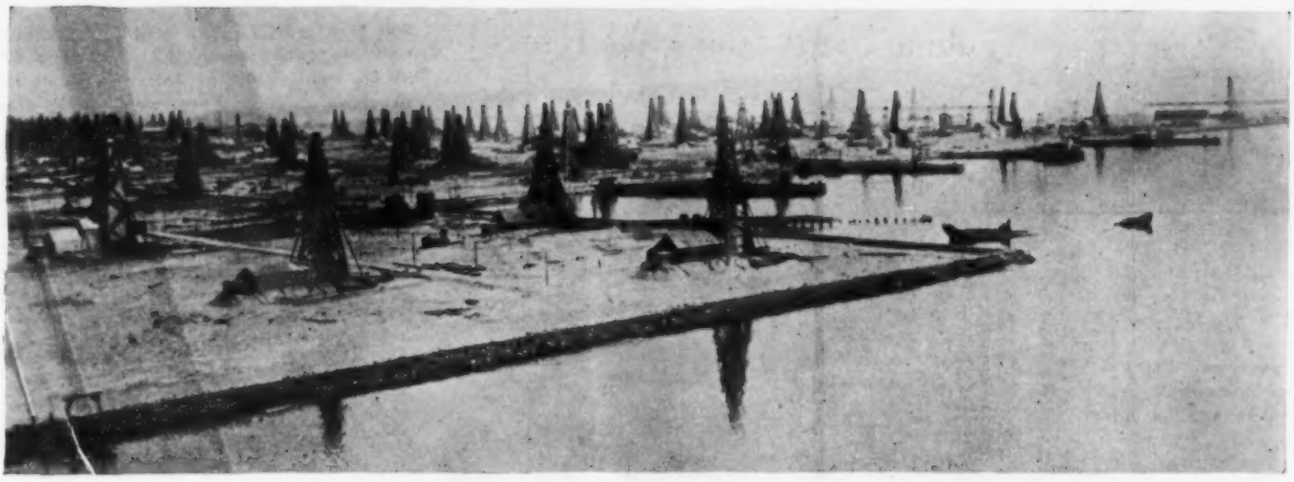


FRED B. TOUGH

Record Price For Panhandle Lease

Ft. Worth, Texas.—A record price for proven acreage in Hutchinson County was paid last week when the C. C. Julian Interests of California acquired the Canqon Oil Company's 40-acre lease on the J. A. Whittenburg ranch, section 12, block "Y," for $1,500,000, of which one-half was reported to have been paid in cash. This lease has been on production since last May, and has been one of the most prolific tracts in the county, having paid the owners, who make headquarters at Seminole, Oklahoma, unusually large dividends. The lease now contains five producers with a combined daily output of 8000 barrels. All lease equipment and about 125,000 barrels of storage oil was turned over to the purchaser. The Southwest Petroleum Company, another California concern, has taken option to buy the 40-acre lease in section 21, owned by E J. Dunnigan et al for $600,000. This lease contains one well, which is flowing 650 barrels daily after having been completed more than two months ago.

Humble reduced its gravity scale price on the Gray County crude 25 cents per barrel on all grades Monday morning, and posted a flat price of $1.25 per barrel for all crude purchased in Whreeler County. Heretofore, the crude in the latter county has been bought by Humble on the Gray County gravity scale of prices, and the change results in a sharp price cut. Humble's new Gray County prices amount to a substantial premium over the prices being paid for other crudes in the Texas Panhandle, such being due to the difference in the gravity and quality of the oils.



General view of Bibi Eibat field showing development in the "filled-in" part of Baku Bay

Rationalization of Russian Oil Industry Progresses Rapidly

Results of scientific study in other countries shown in production gains

By A. R. McTEE
Staff Representative

RATIONALIZATION of the Russian oil industry is progressing rapidly and steadily. During the first nine months of this year the modernization program of "Azneft," Russian Government Oil Trust, exceeded by 50 per cent the work contemplated at the beginning of the year. Notable gains were made in modern methods of drilling and exploitation, resulting in increased production at lowered costs.

Intensive efforts are being made by the Russian government to put its oil industry on a scientific basis. During the past three years various groups of engineers from the Soviet regime have toured this country, studying the American oil industry. Representatives have been sent to other countries where oil is produced, and now attempts are being made to use the knowledge gained by these men in applying modern methods to Russian fields.

Much improvement is planned for the next two years. This includes further introduction of pumping facilities, rotary drilling equipment, building of additional pipe lines and refineries, and the adaptation of American field methods to Russian properties.

The two projects of foremost importance will be the construction of about 1000 miles of pipe line to afford outlets for crude from the two major districts, Baku and Grosny.

Pipe Line Projects

The longer of these lines, an eight-inch, is to be built from Baku to Batum by way of Tiflis, a distance of 500 miles. It will traverse the entire of Caucasus, connecting Baku on the Caspian Sea with Batum on the Black Sea. Thus the line will assure a permanent outlet for the most of Baku production, the volume of which is the heaviest in Russia at this time.

The second contemplated line, probably ten-inch will extend from Grosny to the port of Tuapse on the northeastern shore of the Black Sea, and will be 500 miles long.. At Maikop this line will make connections with a five-inch line that now serves the Kuban group of fields by way of the railroad at Krasnodar, the principal city in the Kuban region. There is already a five-inch line from Tuapse to Maikop and an eight-inch line from Maikop to Krasnodar, a total distance of 90 miles. These lines with the railroad which serves the region give the Kuban district ample transportation facilities.

Present plans include a large refinery at Tuapse, and also one at Batum. to be built simultaneously with the line from Grosny. Thus with Grosny production and that from the Kuban fields available, Tuapse and Batum will be the important Russian ports on the Black Sea. The two most important refineries in Russia will be on the Black Sea, too, and doubtless the most of the Russian export oil will pass through the ports of Tuapse and Batum.

The Grosny field is now connected with Petrovsk, a secondary port on the Caspian Sea, by 90 miles of six-inch line. Thus when the Grosny-Tuapse line is completed, all the fields in the Caucasus region will have pipe-line outlets to both the Caspian and Black Seas. Emba, third in importance in Russian fields, is located about 70 miles inland from the port of Guriev at the mouth of the Ural River. There are many thousands of square miles of undeveloped territory in the Emba region, known to have exceptional oil possibilities.

At present the daily average production of Russian fields is about as follows: Baku, 15,000 barrels; Grosny, 5000 barrels; Emba, 750 barrels; and Kuban, 180 barrels. The Kuban area is just beginning to be intensively developed and consists of four fields along the northeastern shore of the Black Sea.

Rationalization of Drilling

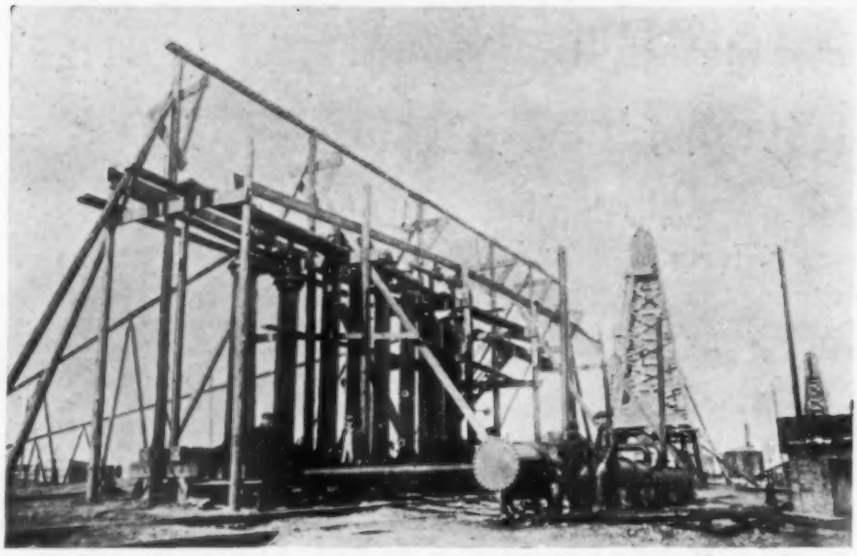
The rationalization of drilling in Russian fields during the first three-quarters of this year has yielded good results, according to A. Mancho, the London representative of "Azneft." He writes:

"From an examination of the footage by quarters and methods of drilling, we observe a steadily increasing proportion of rotary and cable drilling.

	In Percentages		
	Rotary	Cable	Rod
1st. Quarter	57.3	15.9	26.8
2nd. Quarter	57.4	25.6	17.0
3rd. Quarter	68.0	18.8	13.2
Total	61.7	20.2	18.1

"These figures indicate that the process of reconstruction of methods of drilling has proceeded steadily, and naturally has involved a considerable lowering in the cost per foot.

"If we compare the drilling results



Battery of gas holders and gas collector as used on wells with big gas output

of the past nine months with those of the same period of the preceding year, this process of alteration to cheaper and more rational methods of drilling is still more clearly seen:

	1924-25	1925-26
Rotary	40,148	89,183
Cable	5,148	29,245
Rod	34,251	26,131
Total	80,251	144,569

"The total footage for the three quarters of the current year exceed the footage of the three quarters of last year by 64,318 meters, or 80.1 per cent. But while the footage by rotary method increased by more than double, cable method shows an increase of more than five times. The footage by rod drilling decreased.

"If these results were obtained from the organization improvements, still greater were the results which were obtained on the purely technical side. Here our technicians continue to carry on their scientific work, seeking for and applying the newest improvements in the technique of drilling, which will result in the increase in the rate of drilling and in the end in the reduction of its cost.

"The position as regards prospecting for the past three quarters may be traced in the following manner. Of the total footage for the nine months of 144,569 meters, 18,492 meters were on prospecting work, i. e., 10 per cent.

Improve Pumping

"In the last year of operations, that is during the nine month period, a dominating role in the production of oil was played by the bailing process, by means of which the yield was 50.5 per cent of the total oil output. Output by deep pumps accounted for only 9.1 per cent, by compressors, 25.5 per cent, and flowing wells, 12.9 per cent.

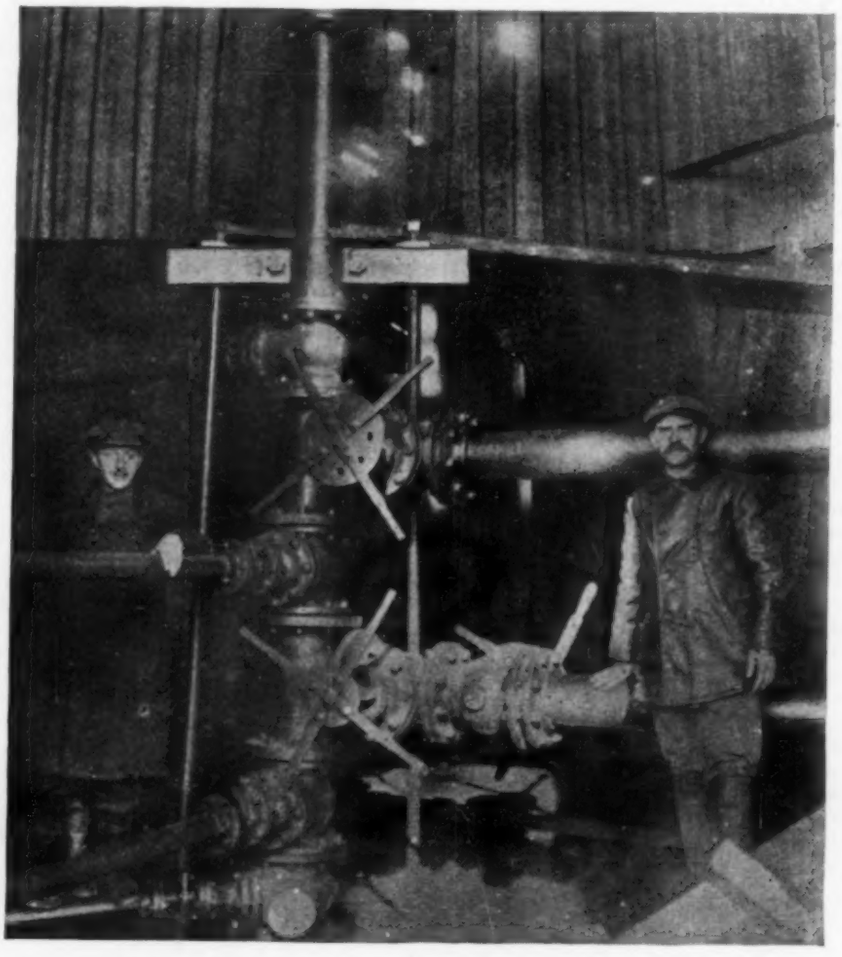
"The economic advantages of pump exploitation have compelled Azneft to abandon the old fashioned bailer. In the near future exploitation by bailing will be a thing of the past. The compressor method still remains the method of exploitation of wells with a large output (from 5,000 to 30,000 poods of liquid per day and over) for the reason that pumps cannot as yet cope with such large quantities of liquid.

"In the matter of transference to exploitation by deep pumps an enormous advance has been made in the current year. For the past nine months by deep pumps there was produced 1,140,800 tons or 28.7 per cent; by bailing practically the same, 2,235,400 tons or 31 per cent, while exploitation by compressors and gushers was about the same. The development of exploitation by pumping during the current year was on the following scale: In October, 1925, by deep pumps there was produced 106,490 tons, 24.1 per cent; by bailing, 152,863 tons, 34.5 per cent. In June there was produced by deep pumps 154,711 tons, 32 per cent; and by bailing 125,031, or 25.8 per cent.'

Special efforts at rationalization are being centered at Baku, according to Mr. Mancho. He says, "That of the fields newly being exploitated, mention should be made of "Bay," the filled in part of the sea at Bibi Eibat and Pouta, where the gushers which have resulted from drilling operations have given reason to assume rich reserves of oil."

Baku had a noticeable increase in production, ascribed largely to new methods of operation. In discussing the increase the writer states that, "At the beginning, as a legacy of the ruination brought about by the war, Azneft's energies were directed exclusively to the rehabilitation of the old organization, and to the task of getting as large a production as possible. The problem of supplying the republic with fuel swamped everything else. But, beginning with 1922-23, Azneft passed

(Continued on page 37.)



Pressure and output regulating equipment as used on Russian wells

Ventura Avenue Production Going Ahead of Predictions

Now believe that output will reach 75,000 barrels daily by January 1; two seal beach wells show

By GEORGE REID
Staff Representative

Los Angeles, Calif.—Oil company statisticians who predicted a few weeks past that the daily production estimate for the Ventura Avenue field, January 1, 1927, could be safely placed at 60,000 barrels, are being forced to make new estimates, for all conditions point to the fact that the early prediction was too conservative. The 65 wells producing in this field are yielding an average of a little better than 750 barrels each, and the total production for the field is havering around 50,000 barrels. This production may be classed as settled and it is not expected that any marked decrease can be expected from the present producers. The last two wells completed at Ventura Avenue can be classed at gusher wells, for Shell's 3000 barrel well of last week (Edison No. 9) completed at 6231 feet, though not as prolific as the Associated Oil Company's 5,000 barrel No. 33 Loyd of two weeks ago, in this area, indicates that production from the 6000 foot level may be expected to average at least 2000 barrels per well.

There are 16 operations in some stage of development below the 5000 foot level and the passing of the next 45 days should see practically all of these wells in the producing class. Six of these operations are near completion in that they are in various stages of development around the 6000 foot stratum. Roughly, the statisticians estimate that each of the 16 wells expected to go on production in the next month or six weeks, should produce about 2000 barrels of oil, on an average, and allowing for some natural decrease and for some disappointments, the present prediction regarding the Avenue's production stands at about 75,000 barrels by January 1.

Many New Producers for Ventura

The Shell Company set 8¼-inch casing in its Edison No. 7 at 3824 feet and is now drilling ahead at 5950 feet through sand and shale. Shell's Gosnell No. 11 has reached the depth of 5970 feet; and its Taylor No. 14 is drilling in hard sand at 6200 feet. It has been reported that the Shell Company contemplates a deep test in its Gosnell No. 23, now drilling around 1350 feet and will make every effort to establish the depth and thickness of the oil producing zone in the Ventura field. Shell set 25½-inch casing at 600 feet in this test and expects to set 3000 feet of 15½-inch casing. It is expected that this well will be carried down to 7500 feet if drilling conditions permit.

The Associated Oil Company is drilling in sandy shale at 6225 feet in its Lloyd No. 17 at Ventura Avenue and has reached the depth of 5950 feet in its Lloyd 32, reporting sandy shale.

The General Petroleum Corporation's Barnard No. 4-A, is the sixth operation in the deeper class. The well is drilling at about 5900 feet in shale and showing oil sand. Six and one-fourth inch casing was set at 4722 feet.

10,000 Barrel Increase at Huntington Beach

Huntington Beach townsite area shows an increase in production of almost 10,000 barrels during the past week, due to completion of 10 wells in this small area. Production for the townsite is now estimated at 22,580 barrels. Last week the production was reported as 11,400.

The California Petroleum Corporation was the largest contributor to this week's list of producers at Huntington Beach. Cal-Pet successfully completed four wells, with a total production of about 2300 barrels, the first of which was its Lewis Community Lease No. 1—completed at 4000 feet. The well is producing 300 barrels of 23.5 gravity oil through a one-half-inch bean. The oil tested 14 per cent "cut", but later cleaned up to about three per cent with an increase in gravity to 26.5 degrees A. P. I. California Petroleum Corporation's McIntyre No. 1 was completed at 3994 feet producing about 900 barrels of 16.8 gravity oil through a three-eighths-inch bean. Its Blaven No. 2 was completed at 3945 feet with a flush production of 1225 barrels of 19.5 gravity oil and 200,000 cubic feet of gas. Cal-Pet.'s Turner No. 1, its latest producer, came in for 600 barrels from a depth of 3945 feet.

E. J. Miley Oil Company contributed one well in the completion of its Pacific Electric No. 3 producing 1380 barrels of 22 gravity from 3990 feet.

Geo. F. Getty's Huntington Beach No. 5 went on production at the rate of 1450 barrels of 24 gravity clean oil, producing through a 38/64-inch bean from 3975 feet.

Petroleum Securities Company holds second place in the number of producing wells contributed during the past week. Its Gross No. 1 was completed at 3975 feet and its flush production through a 40/64-inch bean is reported at 1450 barrels. The oil test 22.8 degrees A. P. I. gravity with a two per cent cut. Gross No. 2 was completed by the same company and at the same depth, producing 1500 barrels at 20 gravity.

The Wilshire Oil Company which early in the development of the townsite deep sand drilled the so-called "mystery" well, added another completion to the list this week. The Wilshire's second well is much better than its first attempt, and in fact is the best well brought in in this area to date. Its Huntington Beach No. 2, completed at the depth of 4030 feet, is producing 24 gravity oil at the rate of 2400 barrels.

Hogan and Lytle completed their No. 1 well October 15, at 3960 feet, producing 1540 barrels through a 40/64-inch bean. The oil is 23.8 gravity.

Completions Due Soon

The Ambassador Petroleum Company's well, Huntington Beach No. 8, is reported standing cemented at 3684 feet, while its Huntington Beach No. 9 is reaming at 3934 feet. Ambassador has rig up for its Huntington No. 10 and has staked a location for Huntington Beach No. 11.

California Petroleum Corporation has rached the interesting depth of 3900 feet in its Tubach No.1 which is reported as drilling in shale.

Geo. F. Getty's deepest drilling operation at present in the townsite area is his Getty No. 8, drilling ahead at about 3800 feet. Julian Petroleum Corporation also has one well, Plaven No. 1, at about the same depth, and another operation working deeper; its Treat No. 1 is drilling in shale at 3910 feet.

McKeon Oil Company also has one operation drilling ahead through hard sand at about 3800 feet.

Petroleum Securities Corporation has four wells drilling between 3800 and 4000 feet. Its Gibson No. 1 is in gray sand at 3910 feet; its Machris No. 1 reports gray sand at 3924 feet; Montgomery No. 1, shale at 3800 feet and Tubach No. 1 has reached the depth of 3989 feet.

The Standard Oil Company also has three wells operating below 3900 feet. Its Huntington Beach No. 4 is standing at 3986 feet. Huntington Beach No. 5, cemented at 4034 feet is drilling, and Huntington No. 7 is reported drilling in shale at 3926 feet.

Superior Oil Company's Gilmore No. 1 is still bothered with water trouble at 4019 feet, and its Nixon No. 1 is drilling in shale at 3800 feet. U. S. Royalties has drilled to 3800 feet in its Stein No. 1. Wilshire Oil Company also has two wells near the deep production. Wilshire's Hnntington Beach No. 3 is standing cemented at 3896 feet, and its Huntington Beach No. 4 is cemented and standing at 3869 feet.

PERSONAL MENTION-MEN YOU KNOW

J. C. Axelson is spending several weeks visiting various oil fields in the East. He left Los Angeles the first part of October, arriving in St. Louis in time to witness the world series baseball games and after spending ten days at the St. Louis factory, departed for Eastern points and will spend some time in New York City. He was accompanied East by Mrs. Axelson. They will return to Los Angeles the first part of November.

William "Bill" Adams has joined the Regan Forge & Engineering Company force to represent the company in Venezuela after making a four months' study of deep well drilling in California and of Regan Forge products. During this investigation he has been able to gather many new ideas on methods of installing casing and tying the different strings together and equipping wells in various ways to prevent blowouts. Adams has to his credit more than 30 years of practical experience in fields over the world and has seen years of service in the Eastern and Mid-Continent fields and in the Dutch East Indies and Venezuela.

John W. Herbert, vice-president of the Herbert Oil Company, with headquarters at Fort Worth, has returned from a lengthy visit in Europe.

W. M. "Bill" McMichael, oil producer and drilling contractor of Okemah, Oklahoma, visited Fort Worth early this week to get a line-up on sending down several strings of tools to Texas, having previously operated there during the boom days of Ranger and Breckenridge.

A. A. Hammer, oil producer, died at his home here October 24. He had been ill several weeks. He was a native of Illinois, coming to Oklahoma in the early days of Mid-Continent oil development. He had oil properties in Creek County.

R. M. Wells, employee of the Gulf Production Company at Blue Ridge, Texas, was killed instantly Monday morning when the car in which he was riding was struck near the Missouri City station by a Southern Pacific passenger train. The body was taken to New Haven, Missouri, for burial.

—Photo by Independent Press.

JOHN W. HOOSER

president of the Hooser Oil Company, Dallas, is conceeded to be one of the most progressive independent operators in the North Texas territory. At present he is developing 1560 acres in Cooke County, which territory he opened with a 200-barrel well after drilling strictly as a wildcat proposition. Mr. Hooser is the inventer of the Hooser fishing tools, distributed by the Continental Supply Company. His first entry into the oil business came after completing a course in engineering. With considerable experience in this line he started drilling, and then rose to drilling contractor. After much success at contracting at Burkburnett during 1916 boom he began prospecting, and organized the Hooser Oil Company.

A. E. Goodhue and H. W. Callan, vice presidents of the Chicago Pneumatic Tool Company, New York City, were in Tulsa during last week, visiting their representatives, Whealton & Townsend.

H. Whealton, of Whealton & Townsend, distributors of Chicago Pneumatic Tool Company equipment, was visiting the Tulsa office of the company last week.

G. C. Francisco, scout in the San Antonio district for the Sun Company, was in Houston over the past week-end to see his alma mater, Rice Institute, trounced on the gridiron by the University of Texas to the tune of 20 to 0. Lucky for Francisco he had sufficient company business in Houston to make the trip profitable in at least one way.

Robert H. Dott, who has been regional geologist in Oklahoma for the Carter Oil Company for several years, has resigned and will go with the Mid-Continent Oil & Gas Company.

John E. Millar, who has been doing sub-surface geology for the Mid-Continent Oil & Gas Company, has resigned and has accepted a position with the Prairie Oil & Gas Company.

Ed. George, who was with the Amerada Petroleum Corporation in the Okmulgee district for five years, will go to the geology department of the Independent Oil & Gas Company.

J. N. Dwight of the J. N. Dwight Company, Tulsa, returned last week from a business trip to Arkansas.

F. E. Bernaen, Lucey Manufacturing Corporation, Tulsa, left for New York last Saturday.

R. G. Garretson, of the Baker Casing Shoe Company, Los Angeles, is in the Mid-Continent on a business trip.

Mountain States Runs

Casper, Wyo.—Pipe line runs in the Rocky Mountain district increased slightly during the past week, after a sharp decrease during the previous week. Wyoming production increased more than 2000 barrels, after a 5000 barrel drop during the previous week. Montana production is listed at slightly over 20,000 barrels, although it is known that 2000 barrels of production was not accounted for, due to the puzzling pipe line situation in the Kevin-Sunburst field.

One of Many Problems Found in Torsion Balance Work

Changes in course of streams present difficulties which require tests over large areas

*By JOHN F. WEINZIERL**
North American Exploration Co., Inc., Houston, Texas

The Torsion Balance is a very delicate instrument designed to measure the difference in gravimetric attraction between two points. It is not the object to discuss the merits or demerits of any particular type of Torsion Balance or to go into the mathematical calculation of the Torsion Balance readings. But on the other hand the writer will attempt to present one of the perplexing problems which has been met in the Gulf Coast of Texas and Louisiana in the hope that it will help to solve similar difficulties elsewhere.

It is evident to those of us who have spent the greater part of the time working on the practical and economic application of the Torsion Balance in the field that the following factors must be considered before beginning work.

First a general idea of the geology of the area must be at hand, and if possible some data as to the sub-surface, such as well logs. In better words the geophysicist must have some idea of what he is looking for, otherwise, he will spend a long time in devising his own correlations, and these in turn will not always coincide with those of the geologist; never?the?less, both can be right.

Second, the scientist must have had some experience on similar territory in order to be able to put the right interpretation on the gradient picture.

Third, taking into consideration the depth at which the object lies, there must be an outstanding difference in the density between the formation or mass closely connected with the oil-bearing or ore-bearing strata or body, and the surrounding formations or country-rock. Furthermore, assuming that there is a sufficient difference in density between these formations, then there must be sufficient dip in the beds of the structure be it an anticline or syncline, or sufficient displacement in the fault, or an abrupt break in the structural attitude of the major formations such as an intrusion of a salt mass or igenous body.

Deep Structures.

Fourth the measurements in search of deep-seated structures must be extended at least with a limited number of stations over a large area before drawing conclusions. The detail work over an area of 2000 hectares or 5000 acres, would require an area of at least 10,000 acres before definite conclusions can be drawn as to the size, shape, extent and depth of the deep structure in question.

Fifth, the economic success of this method depends upon the topography of the country. It is evident that it will cost more per acre to work an area of 5,000 acres in the swamps of Louisiana, than in the prairie lands of Western Texas, because of transportation difficulties.

The law of supply and demand of minerals has played a great role in the application of this instrument. Only the major geologic structures have been sought and the minor features encountered have been ignored in the hurry-skurry for larger production. This accounts for the fact that the Torsion Balance has for the greater part only been applied in the American oil field on salt domes, granite ridges and anticlines.

Bearing the principle of the Torsion Balance in mind it will be apparent that its classic application will be a salt dome. The rapid development in the search of salt domes in the last five years will best be shown in the comparison of the work done on one of the North German Salt Dome-Oldau-Hambuehren, Fig. 1, with the American type of shallow caprock dome, such as Blue Ridge, Fort Bend County, Texas, Fig. 2. In reference to the illustration of the Aldau-Hambuehren Salt Dome the original outline of the salt dome as drawn from well logs will be seen. The boundary line established and proven by the Torsion Balance is also indicated, and the gradients all point away from the salt dome showing that the surrounding formations are much denser than the salt dome itself. This was a type of salt dome unknown to the geophysicists until work began in the Gulf Coast of Texas. In Figure 2 we have the type shallow caprock dome of the Gulf Coast, namely—Blue Ridge, Fort Bend County, Texas. It is to be seen that in the immediate vicinity of the salt dome proper the

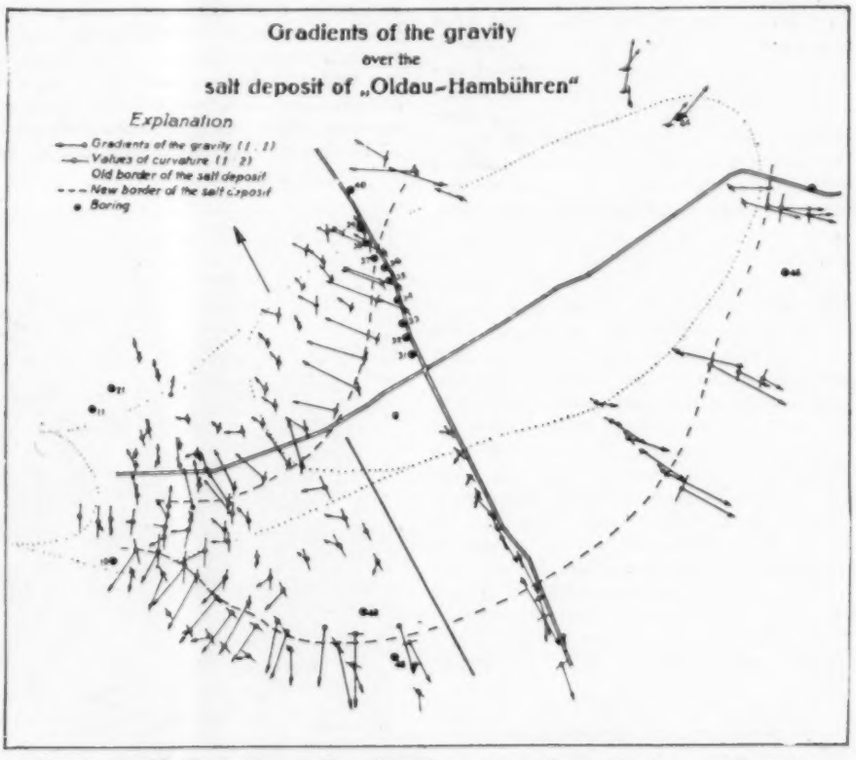

Gradients of the gravity
over the
salt deposit of „Oldau-Hambühren"
Explanation
Gradients of the gravity (1 . 1)
Values of curvature (1 . 2)
Old border of the salt deposit
New border of the salt deposit
Boring

Fig. 1.—In this North German Type Salt Dome the gradients all point away from the dome towards surrounding denser formations.

(*Abstract from a paper under different title given by by the writer in the Geophysical Section of the International Geologic Congress in Madrid, May 26, 1926.)

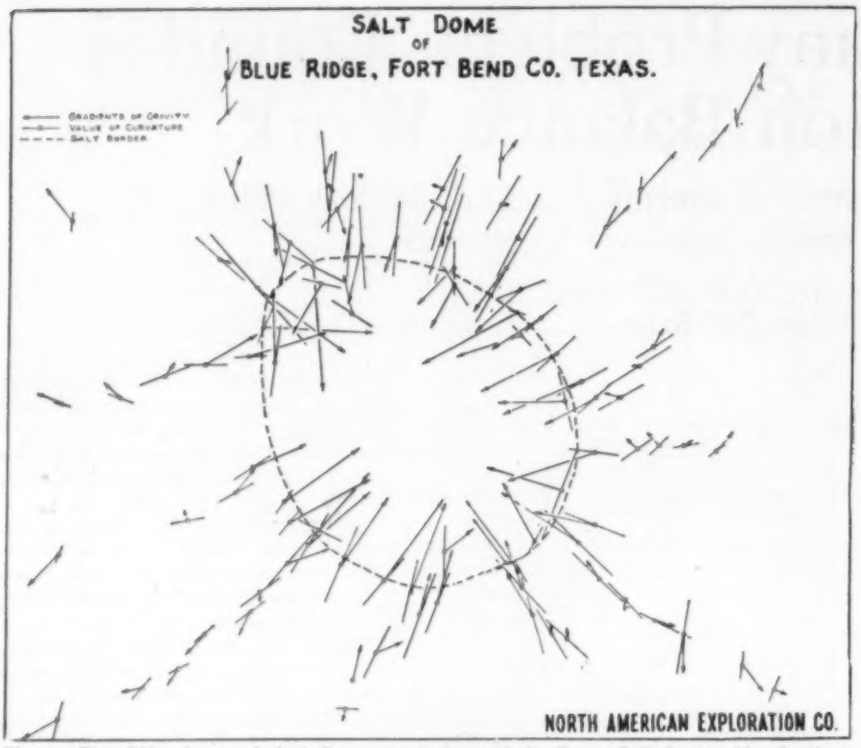


Fig. 2.—Blue Ridge is a typical shallow caprock dome of the Texas Gulf Coast. The Gradients point towards the caprock on the dome because it is on much denser nature, and some distance from the dome the gradients turn about and point away as in case of salt dome, Fig. 1.

gradients point towards the caprock, because it is more dense than the surrounding formations. At some distance from the dome the normal salt flight again comes in. This problem is one of the many problems which has developed in the finding of salt domes by means of the Torsion Balance.

Seek Shallow Depths.

A survey of the domes found in the last two years in the Gulf Coast area of Texas will show that few domes, if any, have been newly discovered below a depth of 1000 feet. The influence of deep-seated salt plugs is very often shown in Torsion Balance measures, but since for economical reasons the producing companies have so far restrained from drilling deep wells it is not yet proven if the conditions of such deep-seated salt plugs correspond with those on shallow domes and if they are connected with oil deposits.

Working below the depth of 1000 feet brings us to an example of one of the problems the geophysicist can have with a Torsion Balance, that is an area traversed by a rejuvenated old meandering stream. For example a stream which has for a long time wound its way in great oxbows over a flat-lying valley, and then due to some movements or change in stream gradients has more-or-less straightened out its course, leaving its former fluvial deposits several miles from its present course or high and dry. Fig. 3 is a sketch of a block model of such an area.

This geological condition immediately presents two possibilities for error.

Possibilities of Error.

First as shown in Fig. 3, we have the above river at a point where in its old beds it had cut ox-bow courses around a remnant of some out-crop, for example Lessie gravel or Rynosa. Submergence buried this remnant below the river bottom. Assuming that this remnant is of denser material than the surrounding deposit of river silt then Torsion Balance work done immediately over this area will give a gradient picture resembling that of a caprock dome. On the other hand, if the material in the remnant is of less density, then the reverse will probably be true. This is a salt dome surrounded by denser formations and having no caprock. In both cases an error can easily be avoided if sufficient acreage is at disposal for measures.

When the amateur has had a mishap in measuring only such a small area the second chance for error will arise when he becomes too skeptical and in Fig. 4 is shown the possibility of a condition above described with a deep-seated salt dome at a depth below 1000-1500 feet.

In this case where the measurements have been made over a small area, the gravels and interfering outcrops of the river valley will so confuse the gradient picture that the attractions from the salt dome in depth will hardly be noticed.

From these two examples it will become evident that Torsion Balance work on deep-seated structures cannot be confined within the bounds of two and three thousand acres blocks situated in river bottoms, because of the many local attractions which will caused confused gravimetric pictures, and in turn will mislead the interpreter.

One of the ways to be sure of results from a detailed survey of acreage in river bottoms where salt dome indications have been found is to go several miles away from the block in question and to scatter groups of stations as shown in Fig. 5. If the influence from the salt still prevails, then one can be reasonably sure of the results in the detailed area.

A group of observations near each other in reconnoisance work has an advantage over a single observation in so far as errors from merely local variations in different observations with the instruments are eliminated.

This method of testing has been accepted for some time on the Gulf Coast area for the above mentioned conditions and has proven very successful as to the results.

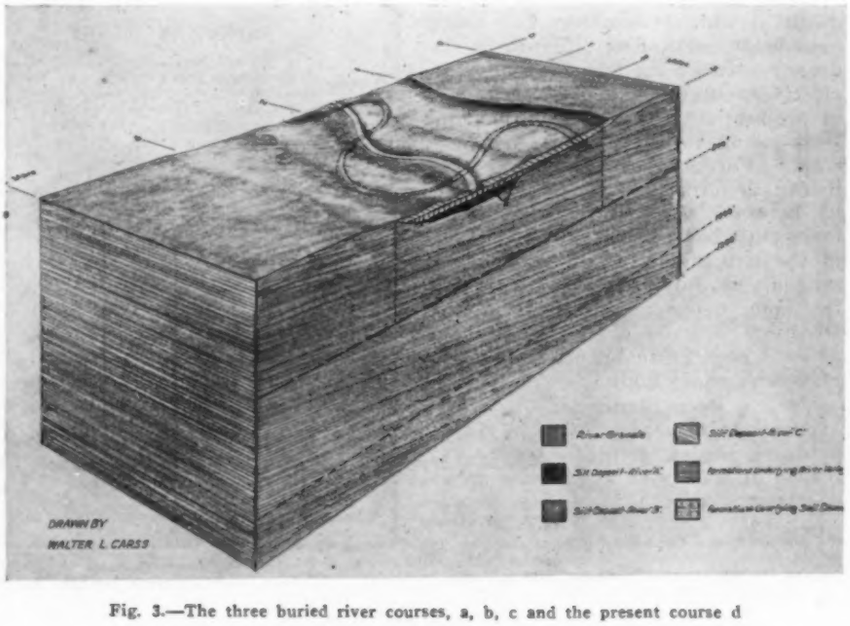


Fig. 3.—The three buried river courses, a, b, c and the present course d

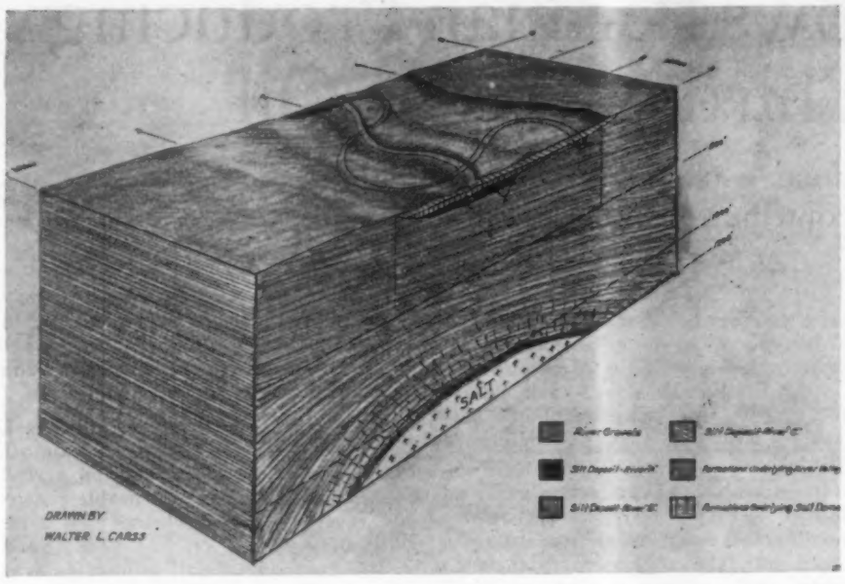


Fig. 4.—Buried river course a, b, c, as shown in Fig. 3 and in addition a deeper seated dome

Rationalization of Russian Oil Industry Progresses Rapidly

(Continued from page 32)

to the rationalization of exploitation and set forth on the road of transference from old methods to the new ones, and during the later years has altered beyond recognition, all the fundamental processes of the work. In the matter of exploitation a special significance must be attributed to the installation of pumping methods, "closed" exploitation of the wells, and the struggle with the evaporation of the oil, the development of output and utilization of gas, and the extraction of gasoline from natural gas.

Conservation of Gas

"Beginning in 1923-24, Azneft started on inaugurating the closed exploitation of the wells, that is, providing 'headers' over the casings with traps for separating the gas from the oil, and with hermetically closed reservoirs in which the water settles out of the oil. The work of complete change to 'closed' exploitation is being carried on energetically, and within two years at latest, the struggle against losses by evaporation will be mostly overcome.

"The introduction of closed exploitation has assisted Azneft in producing during the current year, 7.6 million poods of gas (in oil equivalent), and it is hoped to bring these figures to 11 million poods within the coming year. This gas is utilized for fuel after the gasoline which is contained in it on its escape from the well has been extracted.

"The output of gas in such quantities has become possible entirely owing to the extensive work of transference to closed methods of exploitation.

"The future measures which Azneft proposes to take in regard to improvements in output consist in the extraction of gasoline from gas. Already several special refineries have been erected at Ramany, Surakhani and Bibi Ebat, which are engaged in the extraction of gas oil from natural gas, part of them by the method of oil absorption, and part by the charcoal process.

"Much has been done also in respect to the improvement of steam methods, and where possible in their abandonment, and also in the matter of electrification of the fields. At the present time 80 per cent of all wells under exploitation at Baku are electrified, and the further transfer to electrical power is continuing steadily.

"In so far as the application of new methods of power, it is of interest to make mention of the trial installation of wind-driven motors at Binagadi and Balakahy. It is too early as yet to speak of practical results, as these are experimental installations, giving, it is true, in certain cases, interesting results.

Turbine Drilling

"When the policy of Azneft was directed toward the breaking away from antiquated methods of production, it became clear that it was essential to depart from the costly method of rod drilling, and as a result of this, rotary drilling on a large scale was inaugurated; cable method was also started, and also the system of turbine drilling invented by the Azneft engineer, Capeliushnicoff.

Briefly this last mentioned system of drilling is as follows: A turbine is attached to and turns the bit in the bottom of the hole. Water is forced through the turbine and furnishes the means for generating power in the turbine. Pumps force the water through the turbine and are about all the equipment needed on the derrick. The drill stem is stationary. The water circulates as in rotary drilling. The turbine system of drilling is comparatively new, Russia being the only place where it is being used, but there it is giving excellent results.

"Instead of erecting costly and heavy derricks, Azneft is now utilizing the light type of derrick costing 25 to 35 per cent less than the usual type. For drilling shallow wells, Azneft has started the use of light portable derricks, which, when drilling is completed, can be transferred without being taken to pieces, to a new site for work.

"It is necessary to make mention of the considerable development which has been made in the utilization of mechanical means of transport, lifting, etc by tractors, pulling machines with masts, windlasses, etc.

"In the absence of a derrick a pulling machine is brought up to the well, which machine is operated by a tractor, from the mast there is let down the deep pump, casing and rods, a pumping jack is installed and the well is ready for exploitation."

Sinclair Making Deep Colorado Test

Denver, Colo. — The Repollo Oil Company, subsidiary of the Sinclair interests, is having some trouble in completing its Boulder County test. A small well, almost large enough to be called commercial, was completed at a shallow depth. The hole was in good condition and the company decided to make a thorough test of the region. Nothing of importance has been found, although a depth of 4730 feet has been attained. Underreaming is in progress 100 feet above the bottom of the hole. Six inch casing will be set within a few feet of the bottom.

Kevin-Sunburst Extended

Great Falls, Mont.—A very important extension to the Kevin-Sunburst field has been made by the Flickertail Oil Company, which has completed a 200-barrel well on the northwest quarter of section 33-35-1w at a depth of 1460 feet. Although it is possible that the well has opened up a new pool, it is held almost certain that the production is coming from the regular eastern pool. A check-up of the log with other wells adjoining discloses a condition which may cause wells drilled still farther east to be even larger than the present Flickertail producer. The well did not encounter the Sunburst sand at all—a freak condition. There was considerable gas above the Ellis, which was found at 1459 feet. The sand was drilled only one foot. Another test recently drilled on the same quarter was abandoned when the Ellis was found dry. The Flickertail interests will drill another well at once. The Fifty-Six Oil Company will also drill an offset to the well.

Analysis Shows Permian Producing One-Third of Texas Oil

Pennsylvanian rocks, however, have made greatest contribution to production of State

By RICHARD A. JONES

THE fundamental basis of an analysis of production in a state of the importance of Texas in the oil industry is that the analysis consist of broad generalizations, recording only deductions of major significance. An analysis by the intrinsic meaning of the term, denotes the examination and sifting of details, that the important facts, revealed by a study of these details, but so often obscured by the vast mass of detail itself, be clarified, and made to stand out in distinctive relief. Accordingly, in the present analysis of petroleum production in Texas, details have been used only to discover the salient, commanding factors, and will not be discussed in this paper.

The production for geologic ages has been recorded for major geologic periods only, as the Tertiary, Upper Cretaceous, Permian, and similar eras. Were an attempt made to tabulate production by the various subdivisions of these periods, as the Eocene, Oligocene, and Miocene epochs of the Tertiary, for example, a confusing throng of percentages and figures would be listed that would only serve to hide the major features of production by geological periods.

Likewise, in the analysis of production from sand and lime, respectively, a broad usage of the terms "sand" and "lime" has, of necessity, been made. All oil coming from rocks of a dominantly sandy nature, whether pure sand or sandy shale, has been considered as production from "sand." Under the term production from "lime" has been calculated all petroleum that is given up by formations predominantly of a limey character, whether pure lime, sandy lime, or dolomite.

A similar wide consideration of production from various types of geologic structure is taken. Under "folds" are included all structures, in which folding is the essential form of movement, whether the folds be true anticlines, anticlinal noses, terraces, or domes, either with, or without attendant faulting. The term "fault" is applied to structures in which faulting is the chief tectonic feature, folding being a minor element. This type of structure is confined almost exclusively to the Mexia-Powell-Luling production zone. Salt domes and igneous intrusions are unique species of structure, that, by their very nature, demand separate discussion.

In an analysis of production as broad as the present, disregarding details, small errors may, from time to time, creep into the conclusions; but such errors will compensate one another. Thus, abronmal production from granite wash or brittle shale will cause slight errors in the deductions concerning amounts and percentages of oil produced from different rock formations. However, such errors will be compensated by offsetting errors, arising, for instance, from the placing of an inconsiderable amount of production from a small field, controlled by faulting, into the figures of production from the folded type of structure.

On the whole, the figures and percentages here presented represent accurately the major geologic features of petroleum production in Texas.

The accompanying graphic charts are self-explanatory. In the following paragraphs only various emphatic, vital, and basic factors of wide interest, revealed by the study and comparison of these charts, will be discussed.

Some weeks ago the author happened to casually review the tabulation of Texas production by fields from 1895 to January 1, 1926, in the Annual Statistical Number of The OIL WEEKLY, of date, January 15, 1926. As he read the yearly and total production of the various fields throughout the state, the thought occurred to him, being a geologist and accustomed to consider the oil business from a geological standpoint, that a geologic analysis of petroleum production in Texas would be extremely interesting and instructive.

Many questions presented themselves. How much petroleum has each major geological period produced in Texas, since oil was first commercially developed in the state? What is the relation of these figures to present production by geologic eras? How much oil has been supplied from sand, and from lime? What is the amount of oil that has been produced by the various major types of geologic structure, as folds, faults, and salt domes? What are the relative percentages of production by geological periods, by rock formations, by varieties of structure?

The writer did not know of any published analysis where these stimulating questions might be answered. The means of working out the answers to the questions was before his eyes in the production table; but not being a professional mathematician, he felt hesitancy in embarking upon a detailed study of the columns of figures.

However, he could not throw off the desire to learn what a geological analysis of the figures might reveal.

As a result of a methematical battle, various generalized figures, ratios, and percentages were evolved, which are presented in the accompanying paragraphs, maps, and graphic tabulations, as a brief geologic analysis of petroleum production in Texas.

The most striking event in petroleum production in Texas is the appearance of the Permian as a producing horizon of major importance.

Only a few years ago the, oil possibilities of Permian rocks were almost entirelly unknown, nor was the period looked upon as a very favorable potential reservoir of petroleum. To 1919, only showings of oil had been found in the Permian. Small production was later developed in Mitchell and Scurry Counties, and in early operation in the Panhandle. But it was not until the magnitude of the Big Lake field, Reagan County, was definitely established in 1924 that the potentialities of Permian oil were fully realized. Followed a widespread wildcatting campaign on the plains of West Texas, which, although it has discovered no second Big Lake wonder-pool, has developed production in Crockett County on a small scale, and in Upton and Crane Counties on a very considerable scale; besides recent strikes in Ector and Winkler Counties, the significance of which are not yet known.

The present outstanding importance of Permian oil is due to current activity in the Panhandle, producing a flood of petroleum, that has caused Permian production to amount to one-third of daily Texas production.

On October 2, last, the Permian yielded 171,550 barrels, or 29.9 per cent of Texas production. On October 9, the Permian supplied 187,700 barrels, or 31.6 per cent of total production. Of the production on this latter date, the Panhandle produced over 140,000 barrels; the Big Lake furnished 29,000 barrels; and the Upton-Crane County district yielded around 12,000 barrels.

A startling contrast is the comparison of present Permian production with the total of Permian oil produced from 1895 to January 1, 1926. In this period of 31 years, a total of only 12,121,925 barrels was produced from Permian rocks—and most of that was yielded by the Big Lake field in 1924 and 1825. To the beginning of 1926, the Permian had produced but 1.03 per cent of total

Texas petroleum production, contrasting with the one-third of Texas oil now being yielded by Permian strata. It seems a reasonable assumption, considering the vast extent of potential oil territory in the Panhandle and West Texas, that in the future the Permian will maintain its present position as a major producer, and may perhaps become of ever-increasing importance.

Pennsylvanian Production Most Valuable

In so many localities rocks of Pennsylvanian age have been reservoirs of vast supplies of petroleum, that the word "Pennsylvanian" has become almost synonymous with oil in the mind of the oil industry. In Texas, the Pennsylvanian has upheld its tradition and reputation.

At present, 24 per cent of Texas oil comes from Pennsylvanian strata. In the period from 1895 to January 1, 1826, the Pennsylvanian produced 460,615,114 barrels, or 39 per cent of total Texas production. The large amount of oil produced by the Pennsylvanian, combined with the consistent high-gravity of the crude, and the consequent favorable market price which it demands, have rendered the Pennsylvanian the most valuable of all oil-producing geologic periods in Texas, bringing more money into the strong-boxes of the petroleum industry than any other single productive unit.

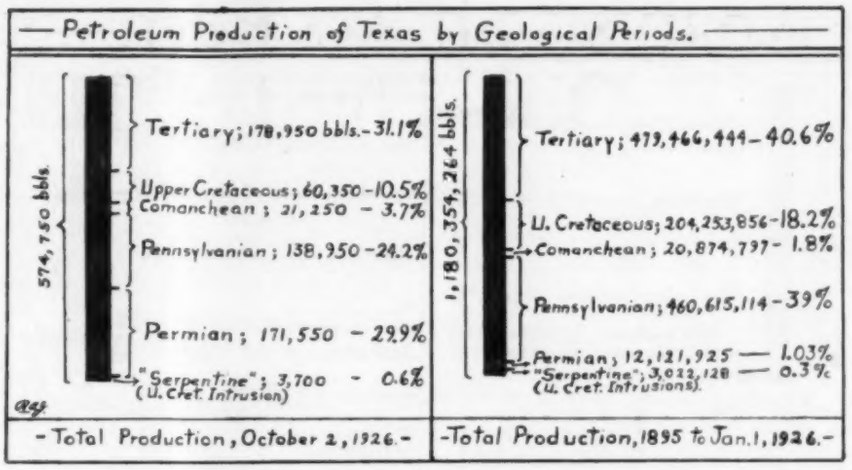
Two Distinct Upper Cretaceous Epochs

From 1889 to 1895, an average of 50 barrels of petroluem per year was marketed in Texas. In 1896 commercial production began, 1450 barrels being marketed; and in 1897 there was a marketable yield of 65,975 barrels. This first commercial development came from Upper Cretaceous rocks in the old Corsicana field, which ranks with Spindletop as the nursery of so many of the prominent men and companies of the Texas industry. The pioneer field in Navarro County was operated steadily with small production for many years. The Upper Cretaceous, having initiated petroleum exploitation in Texas, was forgotten as a possible source of gusher oil, as the little pumpers at Corsicana each drowsily yielded their few barrels daily through the long years.

Then, like a thunderbolt from a cloudless sky, came the breaking loose of Mexia in 1921, and the second epoch of Upper Cretaceous development began — a development perhaps unequalled in all oil history for rapid, prolific production; for marvelous drilling activity, simultaneously with hundreds of rigs; for high-powered wildcatting in search of duplicate fields. The names "Mexia" and "Powell" will always be engraved in capital letters in the annals of Oildom. Since the exploitation of the Powell field, Upper Cretaceous development has been at a relatively low level, save for the flurry at Wortham in late 1924 and early 1925, and for the excitement at Nigger Creek during the past summer.

From 1895 to January 1, 1926, the Upper Cretaceous produced 204,253,856 barrels of oil, comprising 18.2 per cent of production for these 31 years. The remarkable feature is that the overwhelming proportion of this production was yielded in the five years from 1921 to 1926, so that the Upper Cretaceous has produced approximately 20 per cent of Texas petroleum in five years, compared with a life of over 30 years for the industry in the state.

The Upper Cretaceous has produced approximately one-half as much oil as either the Pennsylvanian or the Tertiary. At present it gives up around 60,000 barrels daily, or ten per cent of total daily production.



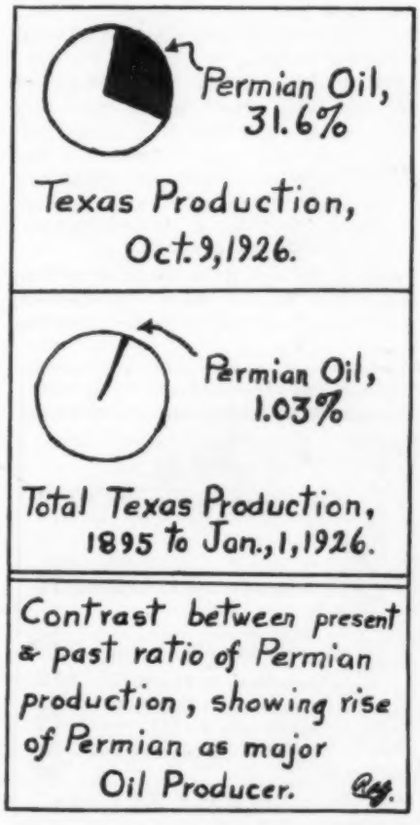
Tertiary Production Persistent, Vital Factor

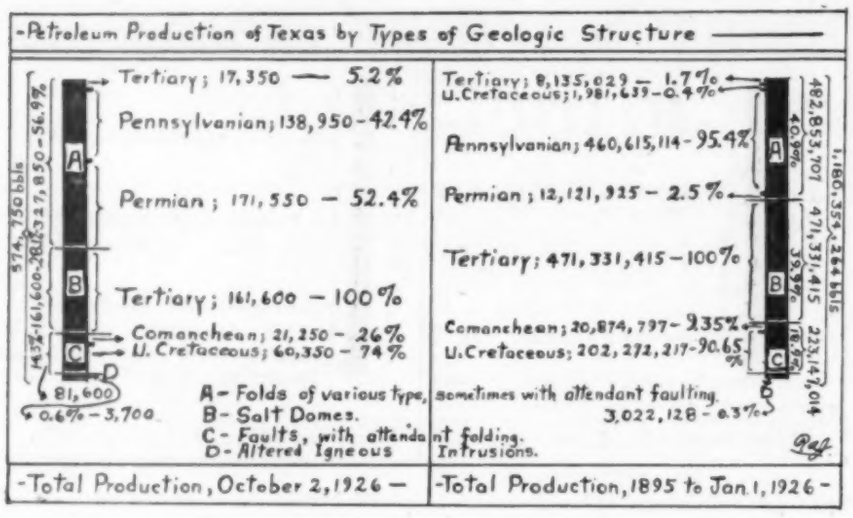
The Lucas gusher at Spindletop in 1901—the largest well ever completed in the United States—stamped "Texas" on the oil map of the world, to the accompaniment of an outburst of frenzied enthusiasm and speculation, the like of which has never been seen before or since. The development of the Spindletop pool proved the training-ground of a majority of the major Texas companies of today, and of their executives, now leading the industry; initiated a frantic search for additional salt domes; and gave the Tertiary period a running start in the race for supremacy in petroleum production in Texas.

In the 25 years since 1901, the Tertiary has been a persistent, vital factor in Texas production. Now and again Teritary production lulls, but salt domes, like women, always possess hidden possibilities of the most unexpected whims and caprices. The current second boom at Spindletop, with a daily production of around 85,000 barrels from 20 acres of land, is an example of what Tertiary salt dome production may reveal at any moment.

Tertiary production has two major classifications: (1). Salt dome production; (2). Production from the ordinary type of folds and faults. Production from salt domes comprises the bulk of Tertiary oil, on October 2 totaling 161,600 barrels; compared with about 18,000 barrels from other types of structure, principally from the Laredo or Mirando district.

To January 1, 1926, Tertiary rocks had produced 479,466,444 barrels of oil, amounting to 40.6 per cent of total Texas production. Approximately one-third of present Texas petroleum comes from the Tertiary, the production on October 2 being 178,950 barrels. Out of the grand total of production in the state to 1926, the Ter-


Permian Oil, 31.6%
Texas Production, Oct. 9, 1926.
Permian Oil, 1.03%
Total Texas Production, 1895 to Jan., 1, 1926.
Contrast between present & past ratio of Permian production, showing rise of Permian as major Oil Producer.



tiary and the Pennsylvanian have supplied almost equal percentages.

Comanchean So Far Minor Reservoir

When the Rios well was completed in Caldwell County in 1922, the Comanchean or Lower Cretaceous period entered the list of major geologic eras producing in Texas. The Luling field, producing from the Edwards limestone, has been one of the most consistent pools in Texas in regularity of amount of oil yielded. A persistent and widespread wildcat drilling campaign followed the exploitation of the Luling field, but no similar pools have been discovered; although the drill may at any time uncover other Edwards limestone fields.

The Comanchean holds the distinction, unique among geological periods of having, so far, produced all its oil from one pool only—the Luling field. Luling, to January 1, 1926, produced 20,874,797 barrels, or 1.8 per cent of all Texas petroleum. At present Luling is supplying around 21,000 barrels daily, constituting almost four per cent of Texas production. The record for Comanchean production, which Luling, singlehanded, has established, is an enviable record for an individual field.

Production From Sand in First Place

It is a prevalent psychological trait that, whenever oil is mentioned, the term "oil sand" comes to mind, as being the correct and proper storage-rock of petroleum. The amount of oil produced from sand provides justification for this almost universal mental attitude, as production from sand surpasses that from any other type of rock.

At this time, the amount of oil gained from sand is approximately 60 per cent of the total daily production of Texas; although, as mentioned in following paragraphs, production from lime is rapidly encroaching upon the preeminence of production from sand. In past years, the supremacy of production from sand has been undisputed. To January 1, 1926, sand produced 959,997,018 barrels, or 81.3 per cent of total Texas production.

The Tertiary and Upper Cretaceous produce almost entirely from sand. In the past, to the beginning of 1926, the Tertiary has supplied from sand over one-third of the total volume of Texas oil. The Pennsylvanian has been a great producer from sand, having yielded, to January 1, 1926, almost three hundred million barrels, or over 28 per cent of total Texas production from sand.

Production From Lime of Unexpected Prominence

Perhaps in common with others, the author had not completely appreciated the magnitude of the amount of oil produced from lime in Texas, and was surprised at the percentages revealed by an analysis. At present, production from lime is running that from sand a race for supremacy; and, if the production from the Permian limestones and dolomites of West Texas and the Panhandle continue to increase, may even surpass the amount of oil being yielded by sand. Also, in recent years, the idea that production from lime was erratic and subject to quick decline, has been revised, in view of the continued steady production of the Big Lake and Luling fields.

On October 2, 211,300 barrels, or 36.8 per cent of Texas oil, was produced from lime. To January 1, 1926, lime yielded 217,335,118 barrels, or 18.4 per cent of total Texas production. Thus, the ratio of present daily production from lime to present total daily production is twice as great as the ratio of past total production from lime to past total production in the state.

The Permian now furnishes over 80 per cent of the total daily production from lime. In the past, to January 1, 1926, the Pennsylvanian supplied approximately 85 per cent of the total petroleum production from lime. It is seen that the Pennsylvanian and Permian have exchanged places as major producers from limestone reservoirs.

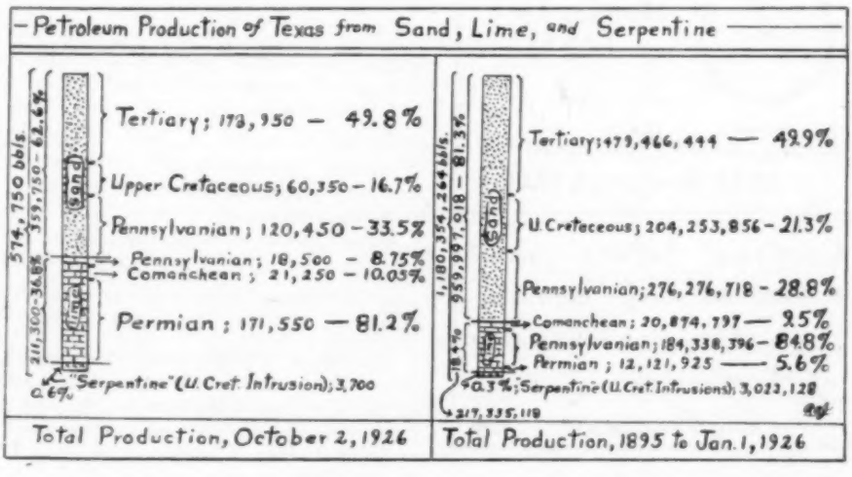
The greatest limestone oil-producing horizon of the Pennsylvanian is the Bend formation. The Permian limes containing oil propably belong largely to the Wichita-Albany series, although there is much controversy over this correlation question, and the matter is by no means settled. The Comanchean is the only other geologic period that produces from lime in Texas.

Production From Folds and Salt Domes Almost Equal

It is an interesting coincidence that two such dissimilar forms of structure as folds and salt domes—the one the result of ordinary earth movements, resulting in anticlines, terraces and domes; the other the most bizarre type of geologic structure in existence, a strange, exotic species, the origin of which is not yet completely understood—should have produced almost equal total volumes of oil in Texas. To January 1, 1926, folds had produced 482,853,707 barrels, or 40.9 per cent of total production; and, previous to the same date, salt domes had yielded 471,331,415 barrels, or 39.9 per cent of total petroleum volume.

On October 2, the folded type of structure was producing 56 per cent of Texas oil, and salt domes were affording 28.1 per cent. Thus, even the present flush production at Spindletop is not maintaining salt dome production at the high ratio which it has enjoyed in a summary of the past.

All of the salt dome production has come from Tertiary beds. At present, the Pennsylvanian and the Permian



each yield approximately one-half of the total production from the folded type of structure, the production of other geologic periods from this form of earth-molding being relatively small. To January 1, 1926, the Pennsylvanian had been the source of 95 per cent of all Texas oil produced from folds.

Production From Faults Most Spectacular

The faults of the Powell-Mexia-Luling zone have exhibited the most exciting and spectacular fields in Texas, with the exception of the initial Spindletop flare of unbridled energy. The fault fields are unrivalled in recent years in the display of dynamic human endeavor, which they have aroused, in the effort to recover the buried millions of barrels of oil—endeavor the more intense, in that, owing to the large initial flush flow of wells, the law of the fields along the faults is,—"first down, first served!"; and he, who would profit by the fields must strain every nerve and resource to reach the pay-sand and bring his oil to the surface, before his neighbor gets down with the drill, establishes underground drainage channels, and secures the most valuable and considerable part of initial production from surrounding leases.

All of the production of the fault fields is derived from the Upper Cretaceous and the Comanchean. Mexia, Powell, Currie, Richland, Wortham and Luling, in the five years from 1921 to 1926, originated approximately two hundred and twenty million barrels of oil, or almost 20 per cent of total Texas production. Of this production, the Upper Cretaceous furnished 90.65 per cent, and the Comanchean yielded 9.35 per cent. Thus, to 1926, the Upper Cretaceous was nine times as valuable a producing horizon in the fault fields as the Comanchean. On October 2, the Upper Cretaceous produced 74 per cent of total production from faults, and the Comanchean furnished 26 per cent. These present figures show that the Comanchean production from faults is now relatively more important than in the past.

Texas Production From Serpentine Unique in United States

To Texas belongs the noteworthy distinction of being the only state in the Union that produces oil from serpentine, an altered basaltic rock, occurring on igneous plugs or intrusions. The only other place in the world where oil has been produced from serpentine is the island of Cuba, in which for years there has been a small petroleum yield from altered basic lave.

The amount of oil produced from serpentine has been inconsiderable, in relation to the total volume of Texas petroleum, although Lytton Springs was a prolific field, compared with many of the smaller pools in the state. However, the peculiar character of the producing horizon, and the uncommon type of structure demand that production from serpentine be given a consideration separate and distinct from all other oil production. On October 2, serpentine and igneous plugs were producing 3700 barrels of petroleum, or 0.6 per cent of Texas oil. To January 1, 1926, serpentine had produced from the Thrall and Lytton Springs fields, 3,022,128 barrels, amounting to 0.3 per cent of total oil production in Texas.

Union Gets Producer on Wellington Dome

Denver, Colo.—The Union Oil Company of California apparently has a good producer in its Yockey No. 1, section 7-9-68, Wellington dome. The Muddy sand was found at 4515 feet and drilled with a core machine for several feet. The gas pressure seemed good and was sufficient to raise a column of oil almost to the top of the casing. The well has not flowed naturally but is expected to when finally completed. The company has announced that its Buckeye No. 3 on the structure will be deepened. This well was a failure in the top of the Muddy sand and was plugged back to 3420 feet, where commercial production was expected to develop from a showing noted while drilling. The stray sand never proved satisfactory. The wells in the Wellington field have varied in production even more than anticipated. In some parts of the field the sand has been fairly loose and the wells have flowed freely, while in other parts the sand has been very tight and stingy. The variation in the gas pressure has been equally as great.

Sketch Map Showing Generalized Area & Percentage Amount of Production in Texas — from Major Geologic Periods. —

	Total Production, 10/2/26.	Total Production, 1895 to 1/1/26.
1.-Tertiary	31.1%	40.6%
2.-U. Cretaceous	10.5%	18.2%
3.-Comanchean & Igneous Intrusions	4.3%	2.1%
4.-Pennsylvanian	24.2%	39.0%
5. Permian	29.2%	1.03%
6. No Commercial Production.		Ref.

Tank Car Movement from Panhandle Gains in Volume

Production reaches 158,970 barrels daily; extension wells throw open much new territory

By H. H. KING
Staff Representative

Amarillo, Texas.—Daily production in the Texas Panhandle district increased to 158,970 barrels during the past week from 574 active producers, while during the same period the tank car movement of crude from the district to refining and marketing centers in the Mid-Continent and Gulf Coast amounted to approximately 83,000 barrels daily. Daily production gained 6760 barrels, while the tank car movement of crude gained about 25,000 barrels over the preceding week as result of the Santa Fe Railroad accepting crude for shipment in tank cars on its Hutchinson County spur line. Considerable congestion prevailed on the raildoad spur during the first week of operation, but this is expected to be corrected shortly and tank car shipments of crude will register a substantial gain each week.

Considerable virgin territory was thrown open for immediate development in Hutchinson and Gray Counties by the completion of extension wells to the proven area, while Moore County offered bright prospects of scoring its first commercial oil well early this week. Prairie Oil and Gas Company and the Phillips Petroleum Company's Johnson Ranch 4-B, an east offset to the 4000 barrel well reported last week as having been completed by Gulf Production Company, proved to be one of the heaviest producers completed under natural flow in the Hutchinson County field. The Johnson Ranch 4-B flowed ten barrels per hour from upper pay at 2803-35 feet, and jumped to 400 barrels of pipe line oil per hour when drilled into lower pay at 2875-78 feet on October 22. Four days later, Tuesday, this well was holding at 220 barrels per hour while Gulf's Johnson 11, located in the southeast corner of section 70, block 46, was holding at 170 brarels hourly from sandy-lime pay at 2890-97 feet, after being in a full week.

New Prolific Area

A new prolific area for Hutchinson County has been opened by the Big Creek Petroleum Company et al's wildcat test on the Cal Merchant land, located a half mile north of the Canadian River in section 37, block 47. This well was reported last week as flowing 60 barrels daily from pay at 2719 feet, with a surface elevation of 2832 feet, and when agitated early this week responded with a flow of 420 barrels during the first 16 hour gauge with the tools suspended in the hole. Both Prairie Oil & Gas Company and the Shamrock Petroleum Company own an interest in the well and leases, and the former is completing a line to take the oil. The log of this well is structurally high, with the top of the big lime at 1877 feet, and surface geology indicates that the well is not on top of the structure, thereby giving promise of some big production on nearby locations.

Wentz Oil Corporation's Merchant 1, located 1½ miles to the northeast and in section 34, has been deepened to 2785 feet without any noticeable increase in production. The Wentz test is standing with 1500 feet of fluid in the hole, and has a surface elevation of 2828 feet. The top of the sandy-lime pay was logged at 2777 feet.

Moore County

Merle Cadman and associates of Tulsa revived interest in Moore County acreage early this week when their J. T. Sneed 1, located at the center of the northeast quarter of section 68, G. & M. survey, block 3, developed a good show of live oil after drilling two feet in oil pay to a total depth of 3227 feet. This test is near the center of a 5000 acre block acquired late last year at $1.25 per acre, and is in the southeast part of the county. The test logged the first gas at 2520 feet, and increased the flow two million at 2675 feet, with eight million cubic feet at 3025 feet. A string of 6⅝-inch casing is being set to case off the gas and drill in. This test has a surface elevation of 3261 feet, and hit the oil pay sufficiently high above the water level to make a producer.

Roxana Petroleum Corporation has scored its second wildcat oil producer in the Texas Panhandle district in as many months. Roxana's latest strike is on the B. E. Finley farm, B. E. Chaney survey, Gray County, and about five miles east of the Wilcox-Pampa field. The Finley test set a string of 6⅝-inch casing with a perforated joint in sandy-lime pay at 3010-19 feet, and swabbed 70 barrels of 43.1 gravity (71 degrees temperature) oil during 18 hours. This swabbing lowered the column of oil in the hole, and the gas pressure is negligible. This well has a surface elevation of 2936 feet, according to reports, and is probably close to the water horizon, since most Panhandle wells develop water at, or near sea level depth. Magnolia owns four sections of unleased land in fee between Roxana's wildcat producer and the Wilcox-Pampa field, while Magnolia held six sections in fee on the west side of Roxana's recent wildcat oil strike in Carson County which is holdnig at 225 barrels daily.

PANHANDLE OPERATIONS

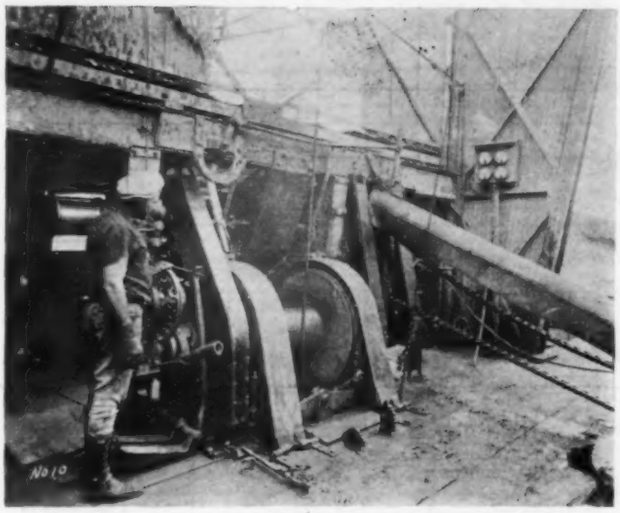
Amarillo, Texas.—Condensed summary of field operations in the Texas Panhandle district at the close of last week is listed below by counties, with comparative totals for the previous week:

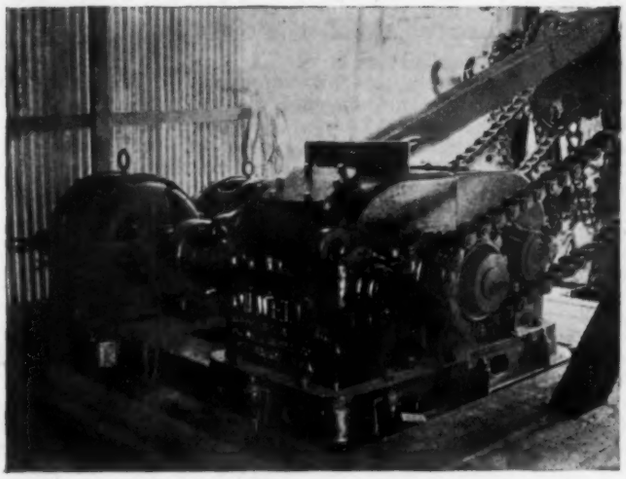
	Completions	Active Tests	Shut Down	Rigs and Derricks	Locations	Totals
Armstrong Co.	..	..	1	..	..	1
Briscoe Co.	..	..	..	..	1	1
Carson County	3	25	5	6	3	42
Castro Co.	..	..	..	1	..	1
Childress Co.	..	1	..	1	..	2
Cochran Co.	..	1	..	..	..	1
Collingsworth Co.	1	1	1	..	2	5
Dallam County	..	1	1	..	..	2
Deaf Smith Co.	..	..	..	..	2	2
Donley Co.	..	..	1	..	..	1
Gray County	6	79	8	11	9	113
Hansford Co.	..	..	2	..	1	3
Hartley Co.	..	4	4	1	1	10
Hemphill Co.	..	2	2	2	1	7
Hockley Co.	..	1	..	..	..	1
Hutchinson Co.	23	203	60	75	37	398
Lamb County	..	1	..	..	..	1
Lipscomb Co.	..	2	..	..	..	2
Moore Co.	..	9	3	1	..	13
Motley Co.	..	..	..	..	1	1
Ochiltree Co.	..	..	4	1	..	5
Parmer Co.	..	..	..	1	..	1
Potter Co.	..	3	1	1	..	5
Randall Co.	..	1	..	..	..	1
Roberts Co.	..	5	..	2	..	7
Sherman Co.	..	1	1	1	..	3
Swisher Co.	..	..	..	1	..	1
Wheeler Co.	..	9	3	9	1	22
Totals	33	349	97	114	59	652
Totals for previous week	30	352	100	113	57	652

Survey Seminole Area

Bartlesville, Oklahoma.—Three engineers of the Bureau of Mines have begun their work of a geological survey of the Seminole area of Oklahoma. At least six months will be required to complete the work, although a preliminary paper will be presented on the arae at the coming meeting of the American Petroleum Institute in Tulsa.

C. R. Swarts, C. R. Bapp and W. S. Morris are the three men put in charge of the work. They are making Shawnee headquarters.





At the left is seen the draw works on the Shell Company's Berylwood 1, in Ventura County, in drilling operation with Drum Clutch engaged, brake open and rotary drive chain to rotary on tension. Driller Cecil Driskill at control wheel. Indicating instruments in upper right foreground. At the right is a view of the Hild Automatic drive at rear of draw works.

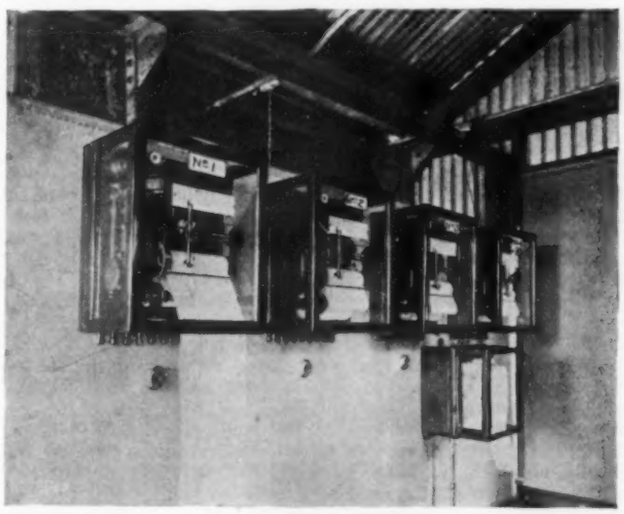
Record of Automatic Drive Given In Well Charts

Shell Company keeps data on Hild Differential Drive used on well in Ventura County, California

By RUFUS J. PILCHER

THE Hild automatic rotary differential drive has revolutionized rotary drilling. Perhaps not more than 25 wells have been drilled with this efficient and radical development, yet so successful has it proven from the standpoint of both efficiency and economy that there is not a shadow of a doubt but that it will soon render obsolete the conventional type of rotary drive mechanism.

This automatic feed system is the practical answer to the urgent need long recognized by drilling experts for a controlled feed that would eliminate the human equation from handling the drill stem. Only the limitations of quantity production by the manufacturer and marketing conditions could restrict the adoption of the Hild drive into very general use, once its unusual merits became known. It is no less a contribution to the efficiency of rotary drilling than the core barrel, the introduction and development of which has done so much to remove guess work from subsurface geology.



Recording instrument panel used in checking work of Hild Differential drive on Shell Company's Berylwood 1, in Ventura County. Type "R" Westinghouse Graphic Wattmeters. No. 1 Instrument, total load 320 K. W. scale; No. 2, Motor "A" 240 K. W. scale; No. 3 Motor "C" 240 K. W. scale; No. 4, mud pump 120 K. W. scale; No. 5 graphic recording pressure gauge inch lbs. 2000.

In spite of the fact that drilling experts have for a long time appreciated crudity of some phases of existing methods of rotary drilling, including the urgent need for more positive control of the feed than could possibly be obtained by a manual method through the brake lever, the problem was not solved until a few years ago. In 1922, Frederic W. Hild of Los Angeles, interested the Oil Well Supply Company and the Westinghouse Electric & Manufacturing Company in his idea of an electrically driven differential feed for rotary drilling. Once sold on the idea these two companies put their engineers on the problem in collaboration with Hild, and as a result a rotary outfit along the lines developed by them was put in operation in December, 1923. The well selected for the experiment was Torrance No. 29, of the Chanslor, Canfield, Midway Company, near the town of Torrance, California. Success attended the test from the start and proved the device sound in theory and practical both in construction and design. Torrance No. 29 was drilled to 3702 feet and conclusively demonstrated that many of the hazards attendant upon rotary drilling were minimized, if not eliminated, by the Hild automatic differential drive.

Hazards Minimized

Since this pioneer well was completed in 1924, more than a dozen additional wells have been drilled by the same company, as well as numerous wells by other companies in California and Texas. The drilling of these wells has established that there are several fundamental advantages of the automatic feed over the standard type of rotary. A summary of these advantages presents a very compelling appeal to the practcal driller. Briefly, the Hild drive can drill a well straighter, more quickly and more economically, with less danger and less depreciation of pipe and equipment than otherwise possible.

An important advantage is that the installation can readily be used with the standard type of draw works. The ease of this adaptation will instantly commend itself to the rotary driller, particularly that the throttle conro land clutch levers are similarly located and operated.

The principle upon which the Hild automatic differen-

tial drive is based is very simple and does not involve installation or operation of elaborate equipment.

How It Works

The installation requires two motors with a unit mounting occupying about the same space as a twin drilling engine. These motors, "A" and "C," are set to drive two bevel gears of a differential drive gear set. "A" motor is so hooked up through the differential to the draw works that it drives the rotary table and also lowers the drill pipe. The other motor, "C," also through a differential, hoists the drill pipe. While drilling, both motors are acting on the drill stem in opposite directions, but running at dfferent speeds, so that motor "C" s acting as a counter balance and taking the strain of the drill pipe, while "A" rotates and lowers it. When both motors are running at equal speed with the brake set, the drill stem rotates but does not move up or down. When the brake is released the weight of the drill pipe exerts torque through the differential, tending to drive "A" Laster while Motor "C," opposing the pull, will slow down. Motor "A" then going faster lowers the drill stem. If the bit should suddenly enter hard rock, placing an undue strain on the drill pipe through running against a rotational torque of motor "A," "A" would slow down, but motor "C" would speed up a little and relieve the downward weight by slightly hoisting the bit off the hard formation and at the same time releasing "A," which would speed up a little and continue to cut rock.

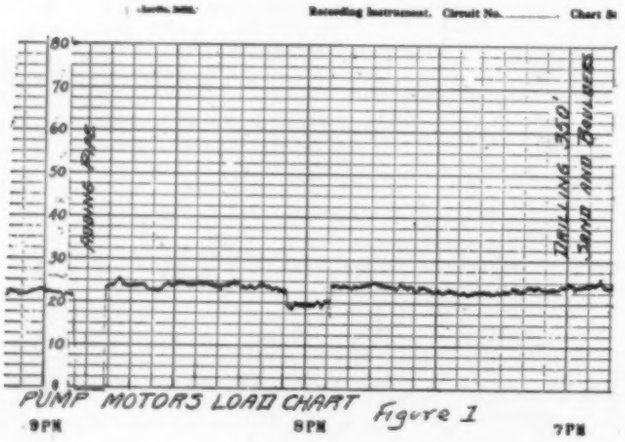
In drilling the motor "A" runs clockwise or forward and motor "C" runs counter-clockwise or reverse. Should the bit engage something that it would not cut at the pedetermined speed set by the driller for his "drilling motion," the rotary table will slow down. When it slows down the motor "A" will also slow down. Motor "C" running reverse will then take the load. Whenever motor "A" slows down, even slightly under the speed at which motor "C" has been set, which should be one control point under the motor "A" speed, then the load or pressure on motor "A" is released sufficiently by motor "C" hoisting it slightly. Motor "A" is then released and assumes the load at its original "drilling motion" speed as set by the driller. This speed adjustment is always automatic from zero to whatever point is set by the driller for his "drilling motion," but this set speed can not be exceeded until the throttle is changed and set at a higher speed point by the driller.

Coming out of the hole both motors are running in reverse and are compounded.

Compared to Auto

This application of the differential drive is similar to that of the rear or drive wheels of an automobile. In the latter case, in turning a corner, the inside wheel, by reason of its smaller circle, is permitted by differentiating the speeds to travel slower, since it must travel a small circle or circular curve in the same time that the outside wheel is moving a much greater arc. Similarly, if one rear wheel of an automobile is in soft mud and the other on solid ground, the one in the mud will be spinning at a rapid rate, because there is little friction and develops no traction, whereas the other wheel on solid ground has secured a hold, is rotating at a slower rate, and securing traction, enables the car to pull out.

It is readily seen that thq Hild differential drive does not permit "romping on the bit" in a mistaken effort to "make hole." The drill pipe is kept rotating around a vertical axis which is nearly in its center, and not outside of



PUMP MOTORS LOAD CHART Figure 1

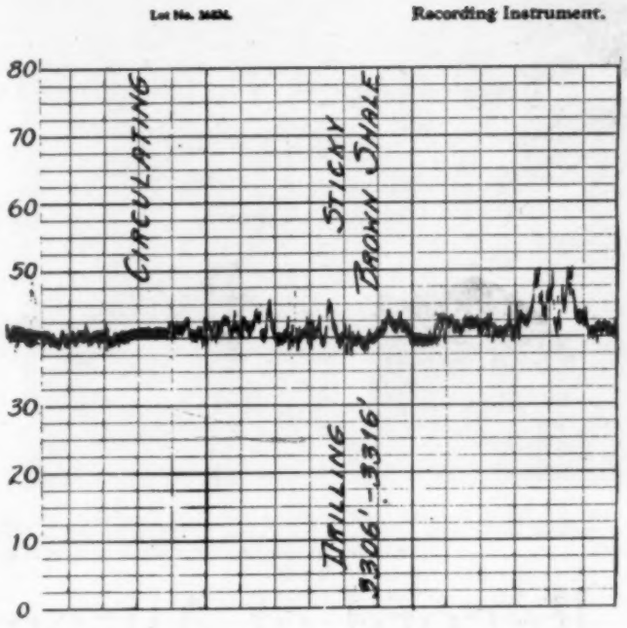


Figure 2

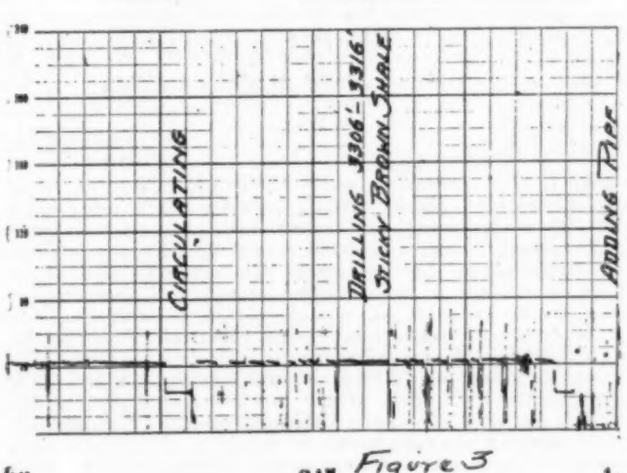


Figure 3

the pipe, as it would be in the case of the drill pipe being forced downward, assuming the shape of an arc. In which case the axis about which it rotates bears the relation of a string to a bow, if the bow be held with a string in a vertical position and spun. Forcing the drill pipe out of its vertical position in the hole has several disandvantages that the automatic feed will eliminate. The first of these is the deflection of the bit at the bottom of the hole, causing it to deviate, with all the attendant hardships of a crooked hole. The other serious disadvantage is that the drill pipe revolving in its bent shape, like a bow, requires more room to rotate in, and wears the casing inside which it is running.

In hand feed drilling the bit often sticks and if the drill pipe has sufficinet tensile strength to withstand this torsion it will stall the engine. However, if the drill pipe is old, or has undergone too much torsional strain and the metal is fatigued or crystalized, it will twist in two, and fishing jobs are the result. Fishing jobs are often unsuccessful, and the ultimate isthe loss of the well. In the Hild drive the torsional action resulting in heavier loads thrown on the bit react to regulate the feed, and does not permit the heavy strain to be thrown on the drill pipe.

Help to Driller

The driller operating this automatic feed is relieved from the exacting physical strain of riding the brake lever. He is alos spared the intensive mental concentration of constantly watching and lowering the drill stem to suit the varying stratographic conditions encountered. Instead, he

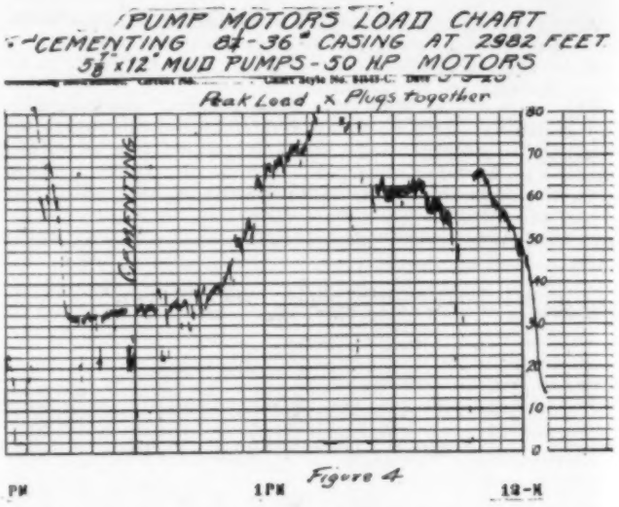


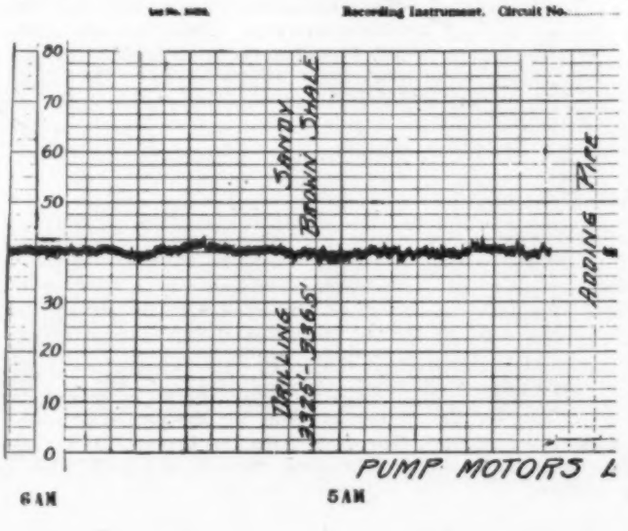
Figure 4

releases his brake and sets his motors to a constant speed which varies only with the breaks in the formation whose hardness determines the speed of rotation of the bit. This relief from the exacting duty on the brake lever gives the driller an opportunity to supervise other activities for which he is responsible and for which he would find little time if compelled to use the hand feed system.

Valuable adjuncts to the electric drive feature of the device are the recording devices used. These are recording watt meters, so arranged as to trace a continuous curve or graph which consists of a succession of high and low points produced by variation of load output of the motors incidental to the different phases of drilling. Each activity accompanying the operation of the machinery leaves its peculiar footprint on the graph. For example, drilling in sand and boulders produces an almost solid heavy line, Figure 1; in sticky shale a series of short waves, Figure 2; either fairly uniform in length or alternate short or long waves. In the case of shale balled up on the bit, two or three long wave lines run up to high peaks, showing the load increase caused by harder pull on the motor, Figure 3. A similar shaped curve is reported as a result of the bit hanging up on a boulder which has a tendency to stall it for a moment, but is automatically eased off by the differential, and the graph of the curve immediately falls to a short wave again, Figure 1.

The scope of this article does not admit of a detailed description of all the activities of drilling as expressed in the graph. Suffice to say that there is a peculiarity of curve for circulaitng without drilling, Figure 3, fishing, cementing, Figure 4, bailing, Figure 5, going into the hole, coming out, making up drill pipe, et cetera, et cetera. Even fishing may be subdivided into washing over, running a feeler, overshot, or any of the various other tools.

The reaction of some drillers to these methods when first installed on some of the early wells was that of antagonism. They naturally thought that they were being watched and being checked up on, but these men were soon convinced and converted to the value of having vis-



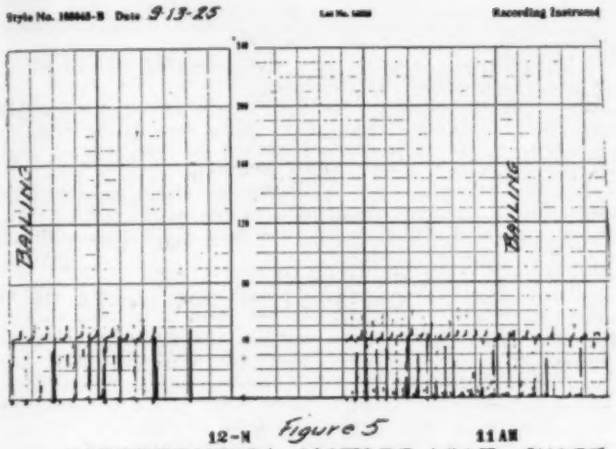
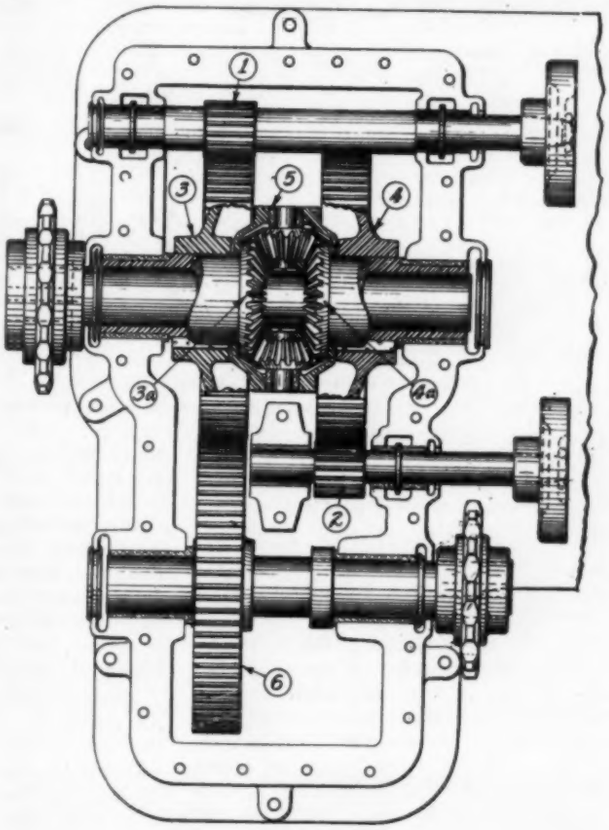


Figure 5

DIFFERENTIAL MOTORS LOAD CHART
BAILING FOR CASING TEST AT 2982 FT.

ible record of just what happened, and a real alibi for not making hole when one existed. Some of the die-hards of the old school may resent such "gadgets" accompanying up-to-date methods, but it is high time that the drilling industry got down to business and forgot forever such



HILD DIFFERENTIAL DRIVE
GEAR CASE-TOP HALF REMOVED TO SHOW DIFFERENTIAL GEARS

practices as "keeping a kitty" of over-hole or logging "doghouse hardshells."

Advantages Summarized

The numerous advantages of the Hild drive are summarized as follows:

1. Straight hole—not possible under old methods;
2. More hole per bit;
3. Minimum wear and tear on drill pipe and other equipment, including casing;
4. Fewer fishing jobs and, of course, fewer skidded rigs;
5. Better operation of rock bits;
6. Less power and labor costs.

7. Less wear and tear on the drillers, and more of their time for real supervision;

8. More salvage value after completion of well or abandonment than if steam were used.

After all, however, all the advantages are summed up in one word—economy. Principally, it is economy of money expenditure, but it is also expressed in economy of man power, which, aside from the sentimental side, is real dollars and cents, too. It is felt that the claim for the Hild differential drive, of cheapness of operation, is an eloquent argument. It is the point in its favor that will sell it anywhere, and a point very susceptible of demonstration. In a directors' meeting where arguments for adoption of new or radical equipment are won or lost, economy is always the real ace in the hole.

The users of the Hild drive have gathered some detailed and conclusive data on costs of installation and operation of the Hild compared with the conventional type of rotary, which the manufacturers will furnish on request. However, the following comparison based on four wells, two steam and two "Oilwell" Hild drilled, is abundant evidence that the Electric Automatic Differential is a money saver.

COMPARATIVT COST DATA OF "OILWELL" HILD DIFFERENTIAL DRIVE

Well No.	Finished Depth	Casing Strings	Date Spudded	Date Compl.	Drilling Days	How Drilled	Ft. Drilled Per Day	Total No. Twistoffs	Power Cost	Power Cost Per Foot Drilled	Cost of Derricks	Extra Labor Fireman Per Day
*A	3700	13" SP 8¼" 36lb 6¼" 26lb	8- 8-25	9-11-25	35	Steam	105.7	2	$596.97-Gas	$0.161	3528.34	15.75
†B	3675	16" SP 10" 45lb 8¼" 36lb	6-19-25	8- 1-25	44	"Oilwell Hild Elec.	83.5	1	$360.67-Elec.	0.098	(a)	(b)
‡C	3450	16" SP 10" 45lb 8¼" 36lb	9-28-25	11- 3-25	37	Steam	93.2	2	557.80-Gas	0.162	3295.33	15.75
§D	3400	13" SP 8¼" 36lb 6¼" 26lb	10-16-25	11-15-25	31	"Oilwell" Hild Elec.	109.7	1	247.69-Elec.	0.073	3545.73	(b)

Summary

	Feet Drilled	Drilling Days	Feet Drilled Per Day	Twist-offs	Power Cost	Power Cost Per Ft. Drilled	Power Cost Per Day	Av. Cost Derricks
Steam	7150	72	99.3	4	1154.77	$0.162	$16.04	3411.83
"Oilwell" Hild Elec.	7075	75	94.3	2	608.36	0.085	8.11	35.45.73

Remarks

NOTE: "a" Steel derrick used.
"b"—No extra man required on Electric Rig.
*A and C—3 Speed Draw-Works.
†Band D—2 Speed Draw-Works.

New Crane County Fields Will Rival Big Lake Production

(Continued from page 29.)

the flow of oil is reported, while this gas gives promise of being sufficiently saturated to permit installation of a gasoline plant.

Good Grade of Oil

The close similarity of the producing formations in the Gulf-McElroy and Church-Fields areas to the Big Lake field has led to serious consideration being given these two areas for future sources of production in the western part of the State. The gravity and quality of the oil is superior to that being produced to the south in the Hurdle district, and is the nearest approach to Mid-Continent oil found in flush quantities in West Texas outside of the Big Lake field.

Humble Pipe Line Comapny's combination six and eight-inch pipe line extending from the Big Lake field to the Hurdle district is scheduled for completion shortly, and Humble made its first official crude price postings in the Hurdle district Monday morning. Humble adopted the Kay County Gas Company's gravity price scale, which ranges from 80 cents for below 26 gravity to $1.35 for 36 gravity and above, thereby netting the producers in the Hurdle district about $1.00 per barrel at the well. Humble also applied this price schedule to the World pool in Chickett County, while heretofore Humble has been buying this low gravity crude on the Mid-Continent schedule. Kay County Gas Company is doing likewise, but is expected to follow Humble on the change.

Marland Oil Company's Hughes 1-D, located in the southwest corner of section 88, Crane County, quit flowing October 21, but resumed on the following day and gauged 971 barrels. This well was later deepened from 2342 to 2347½ feet, and early this week flowed 780 barrels daily.

Montana State Royalties

Helena, Mont.—Royalties acruing to the state of Montana through the sale of oil and gas during September were more than 20 times as great as during September of 1925, according to figures released by the state land office. A year ago September revenue was $1,663 as against $36,416 during September of this year. The development of a very valuable lease in the Kevin-Sunburst field has been chiefly responsible for the huge increase.

Artesia Field Extended

Albuquerque, N. M. — Extension to the Artesia field in Eddy County have been made in several directions during the past month. The wells have not been large and the extensions have not opened up new pools, but the developments have been very encouraging. Completions in the field proper had been somewhat disappointing before the new areas were found productive. The production of the field has held consistently at 3000 barrels daily. Many edge wells are being drilled. The productive fringe of the field is very irregular and for this reason, many operators holding outside leases are optimistic.

Adopt Casing Plan

Billings, Mont.—Operators in the Big Lake field have agreed to adopt a uniform casing plan. Montana state officials and the U. S. Geological Survey have aided in making the plan a reality. Operations in the Big Lake region are small compared with activities in the Kevin-Sunburst field, yet the plan was partially borrowed from the latter. Gas is found in the upper sands in the field, while oil is found in the lower strata.

Poison Gas Investigation Results Given In Bulletin

Bureau of Mines investigators make thorough study of hydrogen sulphide hazard

A typical case of "gas eyes" (not posed)

THERE is in evidence at present a cooperative effort to overcome the health and safety hazard resulting from poison gas encountered in wells producing from the limestone in the Texas Panhandle region that promises to materially lessen the dangers faced by field men. This safety campaign is simultaneously becoming effective in the Big Lake field and the new McCamey field of Upton County, where the presence of hydrogen sulphide gas has also been an impediment to the progress of field work and to the safety of the workmen.

The move now on foot to combat the poison gas hazard is explained in detail in a report made from investigation by W. P. Yant, associate chemist for the Bureau of Mines in the Pittsburgh experiment station, and H. C. Fowler, petroleum engineer for the Bureau in the Bartlesville station. The results of the investigation are presented in the Bureau of Mines Bulletin 231. Their scope of work in the investigation included the following:

Scope of Investigation

1. Examination of the gas coming from representative wells at various locations in the field and an analysis of the gas-air mixtures to which workmen were or might be exposed.

2. Observations of symptoms of poisoning and severity of those symptoms.

3. Observations of the conditions of exposure that produced the symptoms.

4. Study of ways and means of protection and prevention.

As a result of their investigation the two bureau representatives have been able to analyze the situation to the extent of learning the dangers, the extent of precaution now being taken and to make valuable suggestions as to methods of further overcoming the hazard.

Although the extent of the poison gas hazard has been found to exist even in the atmosphere around the wells, (gas-air, as explained in the report, results when the toxic gas is absorbed in the air to a point of reducing the oxygen to a point too low to be safe) near the flow tanks and even on the derrick floor, the chief source of danger is found in the derrick cellars.

The greatest danger of exposure to the poison gas is in the cellar due to the fact that the gas is found to collect there. During the investigation it was found that 31 men were overcome by gas in the cellar of one of the first wells drilled in the Panhandle while making bradenhead connections. Other points of great danger were found to be the gauge hole on top of flow tanks and at the end of gas escape lines connected to the casing to pipe the gas away from the well. No cases have been found where a man was actually overcome while working on the derrick floor, but many drillers and helpers have been reported to suffer from "gas eyes" caused by gas escaping from the hole to the derrick floor.

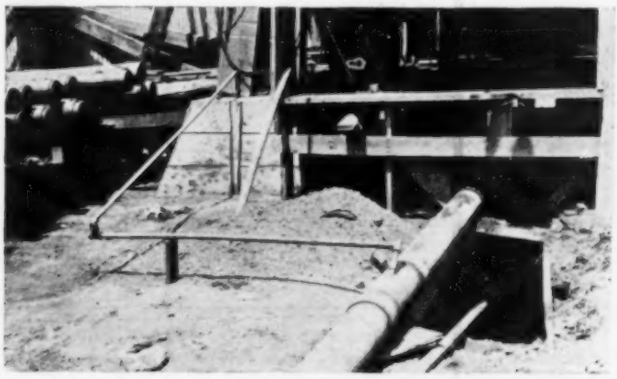
Coming out of the derrick cellar after connecting bradenhead.

Change Cellars

Operators in the poison gas area of the Panhandle are furnishing their crews with hose masks and life lines for wearing while working in the cellars. Improvements in the methods of constructing the cellars have been found beneficial and are being made continuously. The original 16-foot cellars have been found too deep, making the exit runways too steep for a hurried escape, and the depth is being changed to 10 feet. Unnecessary braces that cause obstructions in the cellar proper and runways are being eliminated in order to give as much as a seven-foot clearance space for walking. In addition to these improvements the runways are being made wider so that a man affected by gas can be removed from the cellar more quickly. Many companies are building two runways in order to give an opportunity for air currents to drive out the gas that may collect in the cellar.

The use of a steam jet has been recommended to keep gas off of the derrick

Men wearing hose masks ready to go in the cellar and connect bradenhead at a well making hydrogen gas—Texas Panhandle field.



Eight and one-quarter-inch exhaust line with one-inch steam jet used to keep hydrogen sulphide gas off derrick floor. The exhaust line is connected with casing in the hole by means of a tee placed below the drilling nipple. Note the poor construction of the cellar runaway.

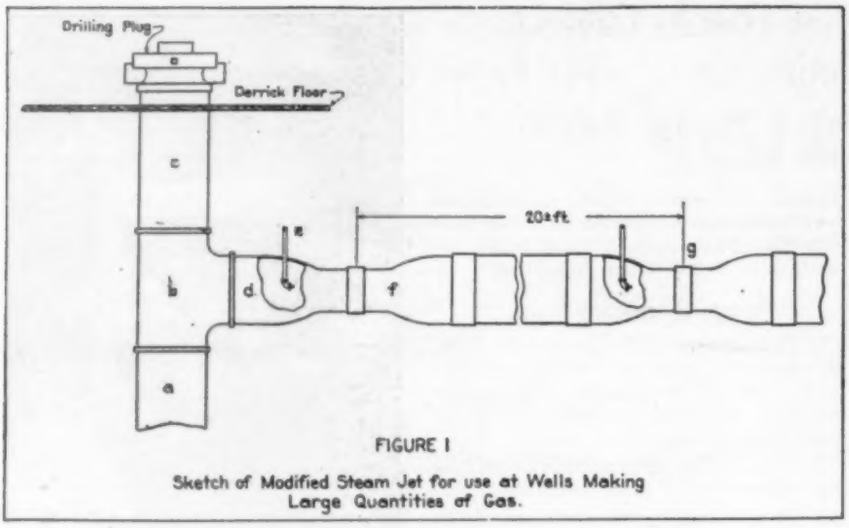


FIGURE I

Sketch of Modified Steam Jet for use at Wells Making Large Quantities of Gas.

floor by connecting the jet to the casing. It has been estimated that an ordinary ⅛-inch steam jet in a straight 8¼-inch diameter exhaust line (without swages) will handle four or five million cubic feet per day. High-pressure gas where available is suggested for use in place of steam.

Field foremen are giving instructions to their men against standing near the end of the escape line along with warnings to work on the windward side of the outlet from which the gas is escaping. Instructions are also being given field men against standing directly over the gauge hole of a tank.

Superintendents and foremen are making a practice of showing by their own examples what precautions should be taken when in the gas danger zone. Instructive bulletins regarding the hazard and the necessity of keeping out of the gas as much as possible are suggested for field men so that they might be able to learn the dangers and ways of avoiding them.

Recommendation has been made for the use of a suitable drilling plug to be kept in the mouth of the drilling nipple to aid in keeping the hydrogen sulphide gas off the derrick floor. The drilling plug should not, however, be a make-shift affair, wrapped with sacking or other picked up material, but should be a tight fitting plug, either solid or split, that will allow the free passage of the cable.

Some companies have been reported making use of a rat-hole very advantageously to keep their men out of the stream line flow of gas while changing drilling tools. It should always be used for breaking tool joints and for changing tools, when gas is coming out of the casing of the main hole. Where possible, it has been suggested it be drilled on the prevailing windward side of the well and at a sufficient distance to prevent the men from working over the gas while changing tools.

A practice of removing the derrick sidings is being followed widely by operators for the purpose of making more free passage for wind currents, thus aiding ventilation and helping to dilute the harmful concentrations.

Protective Equipment

Protective equipment against gas has been in use since the first indications of the gas hazard were seen and more importance is being attached in the equipment and its proper use all along. Employers are furnishing the equipment, instructing their men to wear it and in many cases have special first-aid men to care for the various kinds of equipment to keep it in perfect condition. The adopting of such a policy by every company operating in the poison gas region is being stressed by safety men.

For work in the cellars, inside of tanks or other confined spaces where high concentrations of hydrogen sulphide gas may occur, men are instructed to wear the hose mask equipped with a blower. They are also instructed to wear safety belts and the life line before entering dangerous places. Men are instructed to wear gas-tight goggles with water dams to overcome fogging of the lenses while working on the derrick floor or any other place where the gas is likely to occur that will irritate the eyes. The canister type mask is recommended to be worn while gauging tanks and for other outside ex-

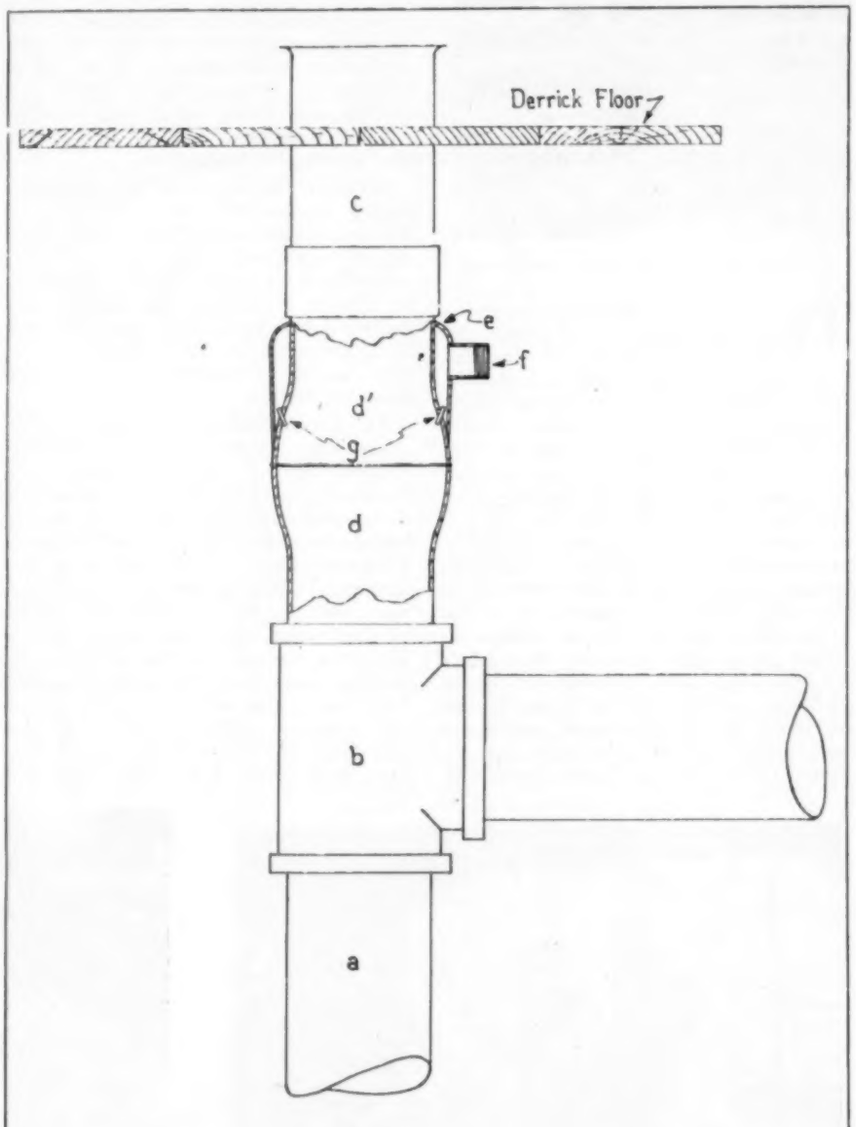


FIGURE-2

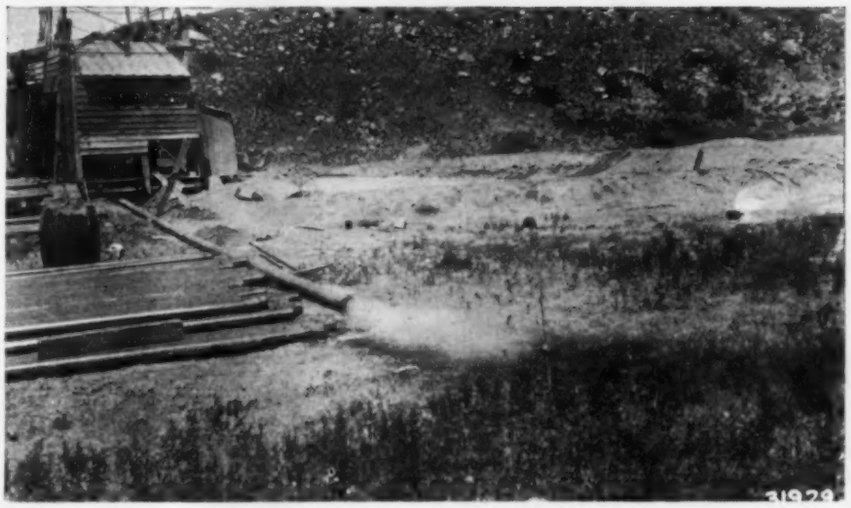
Sketch Of Snuffer And Casing Jet To Aid In Expelling Gas Through Exhaust Line

posures including the derrick floor, where low concentrations of hydrogen sulphide gas exist that irritate the respiratory tract. This mask is not recommended for wear in the cellar inasmuch as it is a filter mask and not a generator of oxygen.

Methods of Treatment

As an aid to companies operating in the ergions effected by the toxic gas hazard the Bureau of Mines representatives have, after thoroughly investigating the various treatments used by first-aid men and physicians, have outlined a brief method of treatment, which they believe could be used to a good advantage in the field. This treatment, as is given in the Bureau of Mines report, follows:

Conjunctivitis (gas eyes)—Consultation with physicians in the fields who have been treating these cases advise that the following treatment for conjunctivitis has given excellent results—not a single case failing to respond to treatment, where the patient has done his part by following instructions.



Outlet of exhaust line used to keep hydrogen sulphide gas off the derrick floor while drilling through the gas zone in a Texas Panhandle field. The steam jet connection can be seen near the derrick.

1. Relieve pain by drops of butyn, or butyn and epinephryn, or in severe cases halocain.

2. Follow with campho borate. One doctor varies this practice by using boric acid treatment.

3. Drops of colloidal silver iodide or (neo-silvol) or argyrol (5 to 10 per cent).

4. Throughout the treatment use hot compresses altering with a cold compress if pain is too great.

Rhinitis, Laryngitis and Bronchitis—Irritations of the nose, throat and lungs are treated symptomatically. One doctor has had good success in the use of "anespray" for the throat.

Subacute poisoning—All of these treatments should be under the supervision of a competent physician, and although the symptoms may appear trifling, they should receive medical attention at once due to the complications which often arise. Although the application of hot and cold compresses in themselves, will relieve pain, in cases of conjunctivitis and irritation with boric acid will be helpful in slight attacks, the difficulty of obtaining sterile compresses and eye cups together with the difficulty of self diagnosis as to the severity of the attack, makes "home remedies" and "home treatment" inadvisable. If a man had a natural tendency toward eye or respiratory weakness, his exposure to hydrogen sulphide gas might result in a complicated condition that would prolong the recovery period. This makes is especially imperative that all cases should be treated by a competent physician.

Acute poisoning—In many cases of acute hydrogen sulphide poisoning there is an immediate cessation of respiration. Thus any treatment to be effective must be given immediately and so simple that it can be given by fellow workmen. There is no time for summoning aid before beginning to resuscitate the victim. In view of this the following treatment is outlined:

1. Get the patient into fresh air.

2. Give artificial respiration if breathing has ceased, become markedly labored or impaired.

3. Summon a doctor.

4. Give inhalations of oxygen, if available, through an inhaling apparatus.

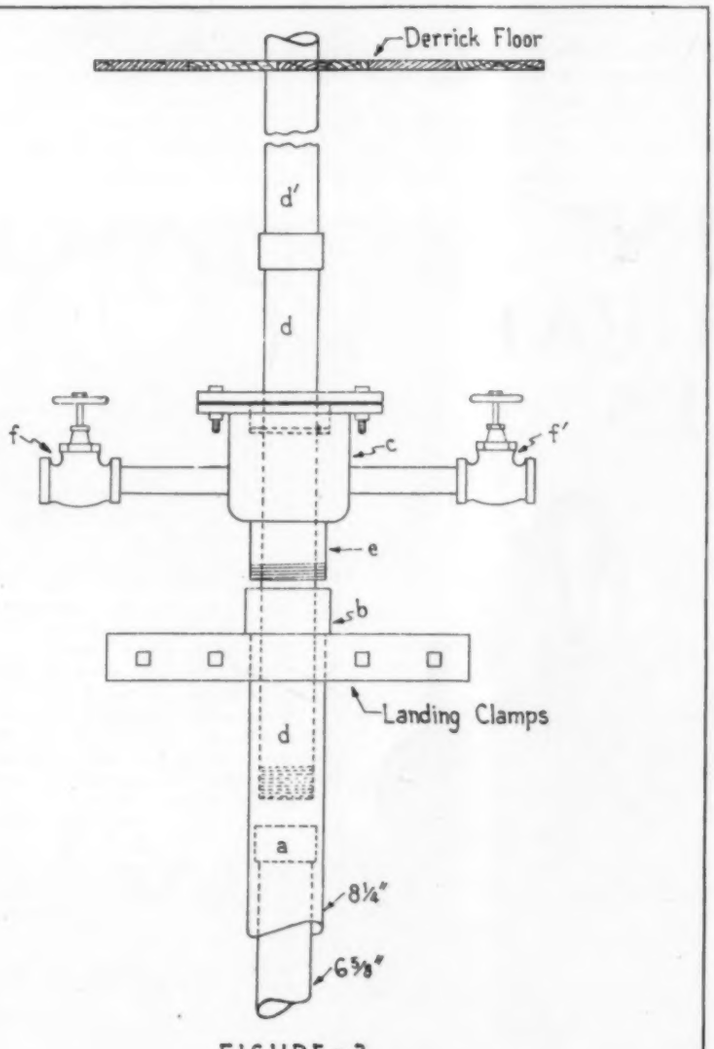


FIGURE-3

Sketch Showing Revised Method Of Putting On The "Bradenhead"

Three Completions Revive Interest In Liberty Extension

Houston, Texas.—Completion of two wells by the Humble Oil & Refining Company and one by the Gulf Production Company on the west side of the South Liberty dome within the past week brings renewed interest to this extension, which was first opened January 28 of this year by the Humble. Performance of two of the three producers, like the first two wells in the field, indicates a weakness in this productive spot to the extent of offering little possibility of a paying proposition unless better pay is found.

The Humble's Welder No. 4 came in for 1800 barrels initial October 22, 23 Baume gravity, from 3555 feet, and early this week had decreased to 800 barrels. The No. 3 Welder was flowing 300 barrels pipe line oil, 22.8 Baume, October 26, after failing to produce on two tests and tubing had been run. The well was bailed about two weeks ago and salt water broke in. It was deepened five feet to 3770 feet with 28 feet of oil sand and then failed to flow when bailed. although the hole was standing almost to the surface in oil.

The Gulf's Beckman No. 1 bids fair to hold up to a substantial well, flowing 1000 barrels October 26, after coming in four days previous for 1200 barrels. It was flowing from more than 30 feet of oil sand to a total depth of 3752 feet, 21 Baume gravity. The Gulf's well is a direct offset on the south to the Humble's No. 3.

Neither the Gulf nor Humble had made locations for further drilling at this writing but more activity is expected to follow immediately. The Associated Oil Company was drilling below 1500 feet in its Tadlock No. 1, located 250 feet west of the Gulf's Beckman 1, early this week.

West of River

The new extension is located roughly five miles southwest of South Dayton and is 8200 feet west of the western rim of South Liberty production, across the Trinity River, which cuts the salt dome. Exploration work in previous years has proved the salt to lie at a shallow depth from the northern line of the 200-acre Welder lease held by the Humble, and widening the field in this direction is proven improbable. In other directions considerable activity may result in the event further wells make substantial production.

The Welder No. 1, discovery well west of the dome, made 1000 barrels initial but dropped off rapidly until production stopped altogether. It was worked over and produced off and on for several months. At present it is being worked over by the Humble following the striking of better sands in the other wells. The No. 2 well is now pumping an average of 175 barrels from 3870 feet after coming in July 9 for 3000 barrels pipe line oil with 27 feet of pay sand.

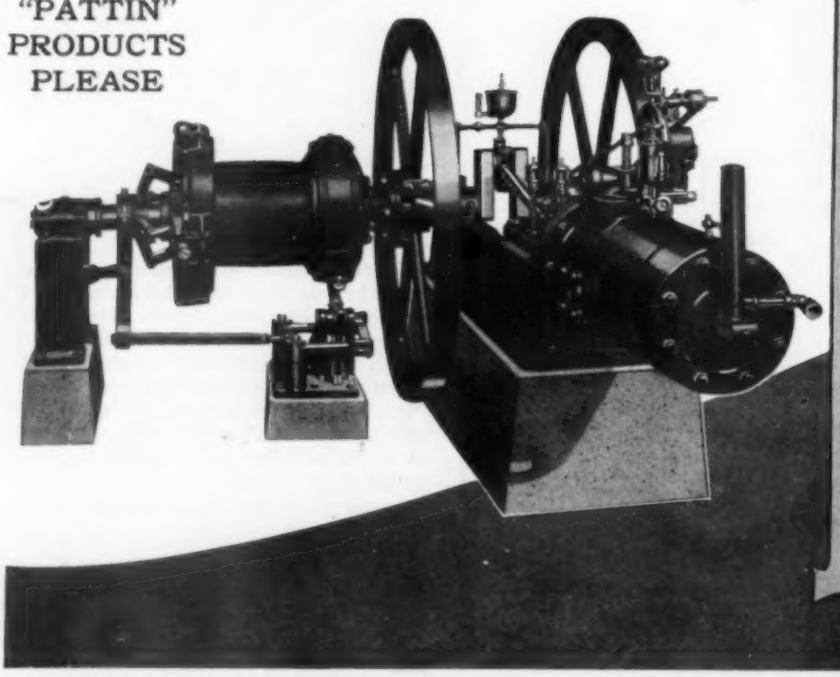
Pierce Junction

The new west extension of Pierce Junction field had its first failure this week when the Gulf's Jones Fee A-1 tested salt water. The Jones 1, also of the Gulf bailed dry but was being tested again. Both wells were slightly below 3700 feet. The Gulf made location for the Jones 2-A early this week.

Failure of the Gulf's wells to produce has not retarded activity in the extension with the exception of the fact that two tentative locations made last week by the Gulf may be abandoned. Marland has four derricks up on its Prudent Investment lease for immediate drilling, Rio Bravo has made location for its Fee No. 6 to the west of the competitive line of drilling, the Humphreys Corporation has made location for its No. 2 in the Jones Subdivision, and Mike Kourey, independent operator, has a derrick going up 800 feet east of the Marland producer. M. J. Bashara was ready to spud his No. 2 Higgins early this week, and the Navarro Oil Company had spudded the Humble Fee No. 2, following completion of the No. 1 about two weeks ago.

"PATTIN" REVERSE GEAR ENGINES

"PATTIN" PRODUCTS PLEASE



The most improved Two Cycle Gas Engine for drilling, cleaning and pumping on the market—is the unanimous opinion of every oil field man who has investigated and witnessed the new Pattin Reverse Gear Engine in operation.

Its ability to develop from 30 to 60% more than its rated H. P. its exclusive built in By-Pass Valve that eliminates extra valves and piping; its improved fly ball governors; its shaft bearings fitted with chain and ring oilers — are all features of the new Pattin that appeal strongly to operator and driller alike.

Install a PATTIN and compare results—we'll abide by your findings.

Bulletin 30 gives complete specifications and construction details.

PATTIN BROTHERS CO.
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Say you saw it in The OIL WEEKLY

"Our Franklin Valveless Engine Runs Like a Cadillac"

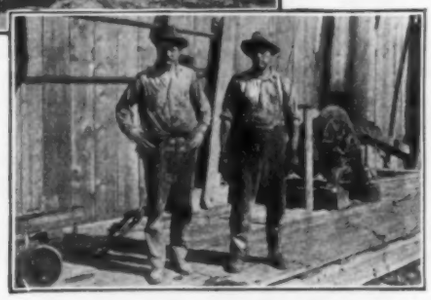
That's what W. J. Bradley, driller for the Twin States Oil Company, thinks of his power plant. And no wonder! Look at his record.

500 Feet of Hole in One Week

On the Twin States wildcatter at Stillwater, Texas, Mr. Bradley put down 500 feet of 24-inch hole in seven days drilling. But speed isn't all the Franklin Valveless gives you.

Saved $30.00 a Day

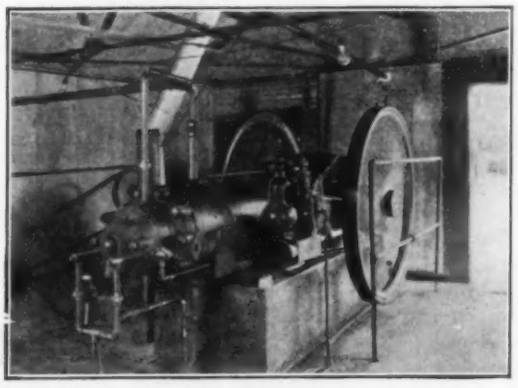
"If steam was used to drill this well," writes Mr. Bradley, "the cost would be about $25.00 a day for fuel oil, and the water which had to be pumped ½ mile, would cost $10.00 a day. The cost of our Franklin Engine is $2.50 a day for water and the same for fuel oil—meaning a saving of $30.00 per day on these two items alone."

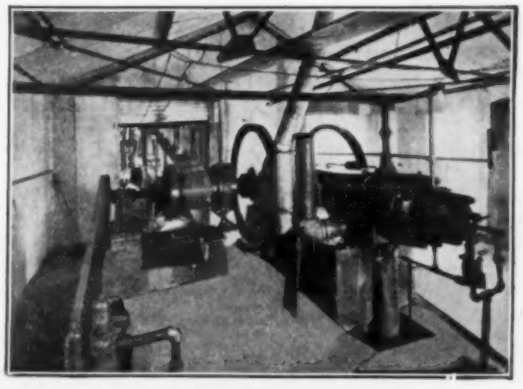


Twin State Oil Company certainly got hold of two good men when they took on Ray Goff, Tool Dresser, and W. J. Bradley, Driller—shown here on the Stillwater wildcat location.

What About Your Drilling Costs?

More than one owner has found it costs him less to scrap his boiler and engine and put in a Franklin Valveless than to keep up repairs on his fuel-eating steam outfit. Ask the nearest representative for some facts and figures on the operating and maintenance costs of Franklin Valveless Oil and Gas Engines.





These two photographs give you a good idea of a Franklin Valveless Oil Drilling Engine on the job. A neat, clean installation that requires practically no attention for days on end. The Franklin Valveless is fully controlled from the derrick—fast, flexible, powerful, economical.

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FRANKLIN VALVELESS ENGINE COMPANY

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THEY BEAT STEAM AT EVERY TURN

Tulsa Engineers to Discuss Waste Problems At First Fall Meeting

Tulsa, Oklahoma.—For its fall meeting, the nights of October 28 and 29, here the Mid-Continent Section of the American Society of Mechanical Engineers wil take up the subject of Waste Elimination in both the manufacturing and the producing branches of the petroleum industry.

Those sponsoring the program have called attention to the fact that this program in no way duplicates that recently held here by the Mid-Continent division of the American Institute of Mining and Metallurgical Engineers. Members of this latter body will meet with the mechanical engineers in the two programs and some of the men on the program are prominent in A. I. M. M. E. affairs.

The program the first evening will be on this topic—Progress in Waste Elimination in Refining Circles. It will be introduced by Charles G. Rebman of the Mid-Continent Petroleum Corporation.. Then will come discussions.

The second evening Paul Guarin of the Roxana Petroleum Corporation will offer the general topic paper—Progress in Waste Elimination in the Production of Oil. Six papers of discussion will follow this.

Officials of the Mid-Continent Section of the American Society of Mechanical Engineers are: H. B. Bernard, Sinclair Oil & Gas Company, chairman; M. H. Kotzebue, Tulsa Boiler & Machinery Company, vice-chairman; L. E. G. Bignell, Parkersburg Rig & Reel Company, past chairman; W. G. Heltzel, Sinclair Pipe Line Company, secretary. Members of the executive committee: A. J. Kerr, Equitable Meter Company; W. T. Fields of Little Rock, Ark.; R. L. Roads, Oklahoma A. & M. College; R. A. Seaton, dean of the Kansas State Agricultural College; F. R. McGrew, president Standard Pipe Line Company of Louisiana; and M. H. Gilcrest, Amarillo, Texas.

The program for the two evenings follows:

October 28, 1926, 8:00 P. M.
Mayo Hotel—Gentlemen's Writing Room

Progress in Waste Elimination in Refining Petroleum. By Charles G. Rebman, Mid - Continent Petroleum Corporation.

Discussions:

1. J. W. Rice—Marland Refining Company. Subject: Corrosion from Panhandle Crude.
2. P. C. Van Gilst—Shaffer Oil & Refining Company. Subject: Evaporation Losses.
3. D. S. Miles—Empire Refineries, Inc. Subject: Waste Heat.
4. Benjamin Fixman—Empire Refineries, Inc. Subject: Liquid Phase Cracking.
5. C. R. Barton—Tidal Refining Company. Subject: Unassigned.

October 29, 1926, 8:00 P. M.
Mayo Hotel—Crystal Ball Room

Progress in Waste Elimination in Production of Oil. By Paul Guarin, Roxana Petroleum Corporation.

Discussions:

1. Hollis P. Porter — Gypsy Oil Company. Subject: Flowing Wells by Artificial or Natural Means.
2. Glenver McConnell—Roxana Petroleum Corporation. Subject: Waste in Selection of Equipment.
3. Ludwig Schmidt—U. S. Bureau of Mines. Subject: Evaporation Losses.
4. Charles R. Eckes—Consulting Geologist. Subject: Treatment of Waste Oil at Smackover.
5. R. S. McFarland—Twin State Oil Company. Subject: Progress in Reduction of Waste in Management of Oil Producing Organizations.
6. John M. Lovejoy—Amerada Petroleum Corporation. Subject: Elimination of Waste in Exploration.

Institute Committee on Tank Car Gauging

Tulsa, Okla.—A special committee on "A Uniform Method of Calibrating (gauging and strapping) Tank Cars" has recently been appointed as a result of the request of the American Petroleum Institute's general committee on railroad transportation, which was adopted by resolution at the Institute's meeting in Chicago, August 5.

Members of this committee have been named as follows with a possibility of additions to the committee later:

Dr. R. P. Anderson, chairman, American Petroleum Institute, New York; J. D. Hess, Sinclair Refining Company, New York; A. E. Smith, Union Tank Car Company, Chicago; C. A. Porter, Indian Refining Company, Lawrenceville, Ill.; Thos. Beaghen, Jr., Mexican Petroleum Corporation, New York; E. A. Kraft, Pure Oil Company, Chicago; Joseph W. Hays, Mid-Continent Petroleum Corporation, Tulsa; O. D. Horne, Marland Refining Company, Ponca City, and F. W. Shay, Standard Oil Company (New Jersey), Elizabeth.

The resoultion requesting the appointment of this committee is as follows:

"The Committee recommends that the American Petroleum Institute investigate the whole subject of tank car gauging and strapping with a view of standardizing upon some method; and, that the Institute, through some appropriate committee, proceed at once to invite and receive suggestions and recommendations of tank car builders, refiners and other petroleum tank car owners and others interested who may have any information to offer upon the subject."

Texas Division Meets at Dallas

Dallas, Texas. — The eighth annual meeting of the Texas Division of the Mid-Continent Oil & Gas Association will convene at the Adolphus Hotel in Dallas, October 29.

The announcement stresses a welcome to any person interested in or identified with the oil business whether or not a member of the association. Members are requested to bring their friends who might derive any benefit from the meeting.

The business meeting will be held in Bambooland East at the Adolphus Hotel at 9:30 o'Clock on the morning of October 29, at which time an executive committee to serve the association during the ensuing year will be elected and the annual report read and discussed.

The entertainment committee is planning a program following the business meeting, and at 6:30 in the evening an informal banquet will be staged in the Palm Garden of the Adolphus Hotel.

'Making Reservations for A. P. I. Meeting

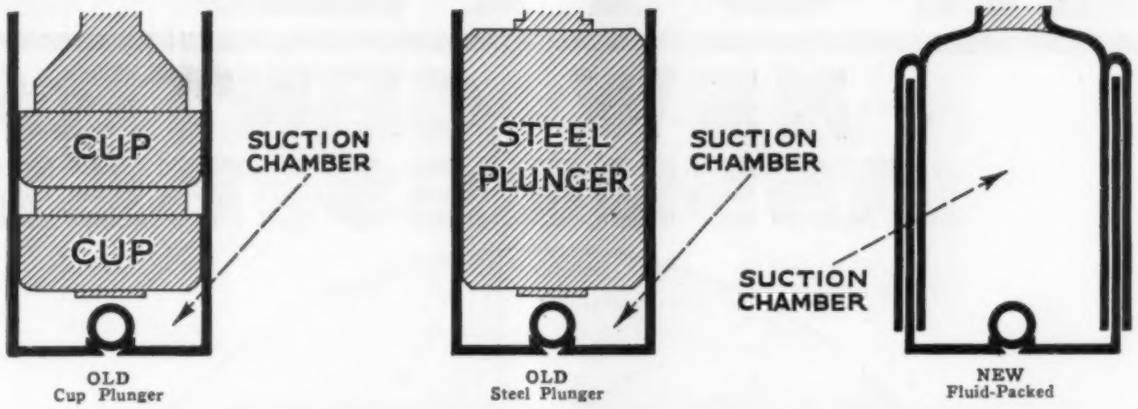
Tulsa, Okla.—For the convenience of visitors to the seventh annual meeting of the American Petroleum Institute at Tulsa, December 7-9, directors of the Institute residing in Tulsa have formed themselves into a committee for entertainment and various other purposes. Chief among the purposes of the committee is that of caring for hotel arrangements, and the local committee has made an agreement with the principal hotels for an option on approximately 1500 rooms to insure sufficient housing accommodations during the meeting.

Under the committee's arrangements the members will have charge of assigning the rooms to visitors direct. Persons planning to attend the meeting are requested to apply now for rooms, stating their hotel needs, to W. C. Franklin, chairman, committee on hotel accommodations, 504 Cosden Building, Tulsa.

The D. & B. Pump Company os Los Angeles is adding approximately 25 per cent. to its sucker rod plant at Dallas.

The Lufkin Foundry & Machine Company of Lufkin, Texas, has opened an office in Eldorado, Arkansas, in the Schuler Building, with Louis Douglas in charge.

The NEW Principle of Operation of the



OLD
Cup Plunger

OLD
Steel Plunger

NEW
Fluid-Packed

FLUID PACKED PUMP

Astonishing Performance Records in Deep Well Pumping

IS IT POSSIBLE TO PACK WITH FLUID? That fluid can be used to pack a pump may seem impossible. Yet we have actually packed a pump with fluid—have introduced an entirely new principle in deep well pumping—and have thereby solved several of the Oil Industry's most vexing problems.

The third illustration indicates how the pump works. Clearance between the "traveling tubes" and the standing tube is 20/1000 of an inch minimum, permitting a film of fluid between the metal surfaces. This fluid both lubricates and packs the space, the clearance being so limited and the natural adhesion of the fluid and the metal surfaces so pronounced that there is no slippage of the "fluid pack" when the traveling tubes move upward to produce suction in the suction chamber.

ADVANTAGES: This pump has completely eliminated the costly process of cup changing, and has, in actual use, handled the worst cases of sand, mud and shale conditions without sanding up. Rod breakage has become much less frequent, in every instance on which we have had reports. As a result, the FLUID PACKED PUMP will handle for weeks at a stretch, without repairs, wells which require constant re-cupping and other attention when operated with other types of working barrel.

Other important advantages are reduction of emulsification to a minimum, and ability to handle excess heat conditions, as the loose fit allows for any expansion. Scoring does not affect the efficiency of the tubes, which pump satisfactorily even with a clearance of 100/1000 of an inch, or more. The pump, as a result of its liberal clearance, has an intensely free motion on both the up and down strokes.

Our field representatives are all men who have had actual oil field experience and can help you solve difficult problems. Let us send the nearest one to see you. No obligation.

ROBERT N. ATMORE COMPANY

913 E. First St., Tulsa, Okla.

Bristow Healdton Winfield Smackover Shreveport Casper

Robert J. Miller Co., Houston, Texas

Manufactured only by
The Fluid Packed Pump Company
Los Neitos, California

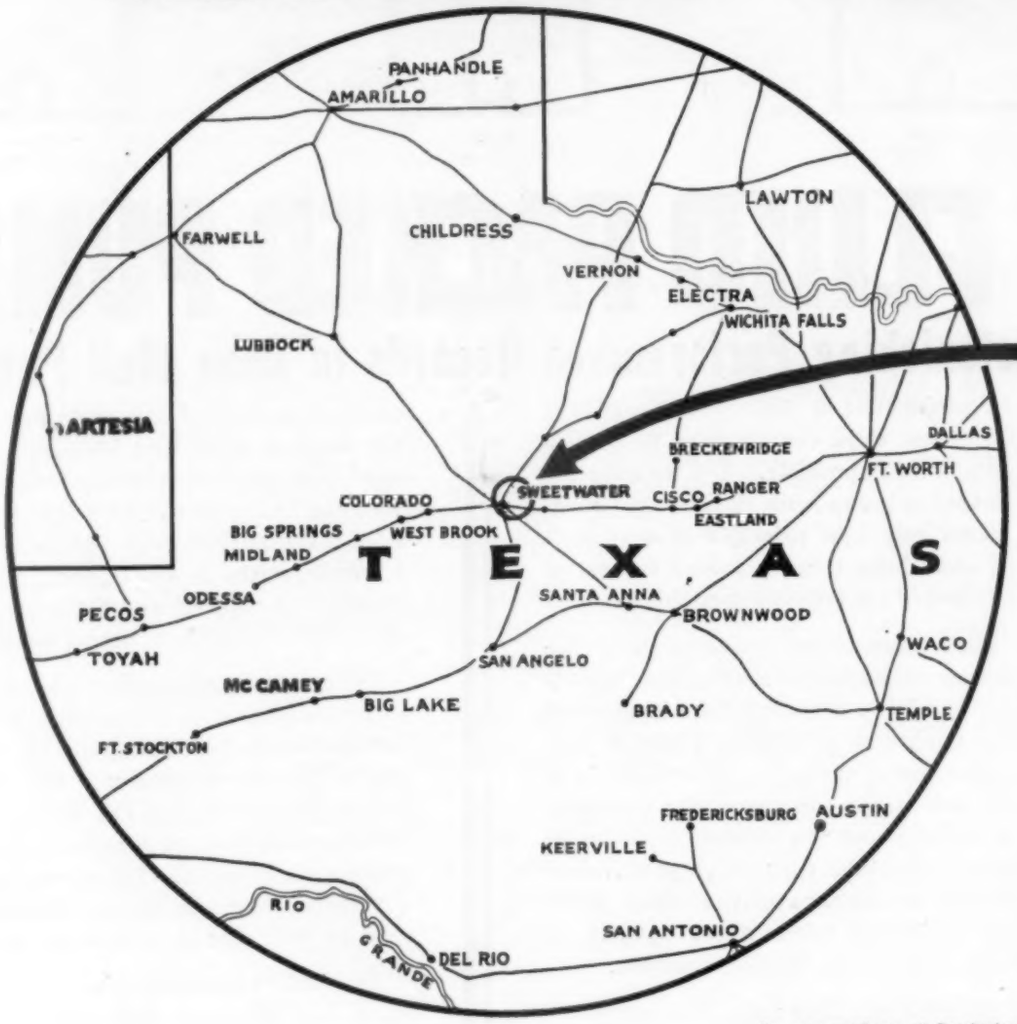
ROBERT N. ATMORE COMPANY

FLUID PACKED PUMPS

Say you saw it in The OIL WEEKLY

MORE

NEW CENTRAL
ASSURES BETTE



Our new warehouse at Sweetwater serves the area indicated within the circle above. Sweetwater is the ideal location for a warehouse, being adjacent to all fields of importance and is served by three trunk railroad lines running in six different directions. Drillers and contractors whose operations are within this area will find the new Sweetwater distributing warehouse an important adjunct to Clark service. We also maintain field warehouses at McCamey, Texas, and Artesia, New Mexico.

CLARK BROS

Say you saw it in The OIL WEEKLY

SERVICE

WAREHOUSE
DISTRIBUTION

We carry a complete line of repair and replacement parts for Clark engines and compressors in our new warehouse at Sweetwater, photo of which is shown above. This new warehouse will serve exclusively the area indicated by the circle on the left-hand page. Our warehouse service, which has always been an important part of the smooth, continuous operation of Clark engines and compressors, is now made better than ever.

COMPANY

Say you saw it in The OIL WEEKLY

CRUDE OIL PRICE QUOTATIONS

Crude Price Changes

October 25.—Effective at the opening of the market today, Humble Oil & Refining Company added Wheeler County to its Hutchinson-Carson County posting, announced a posting on Gray County crude beginning with 28 gravity and going through 44, 25 cents below the previous price outside Hutchinson-Carson County, and announced the same posting on Crane-Upton Counties as Kay County Gas Company is paying, also adding Crockett County to this last group.

Current Postings

EASTERN STATES

	Oct. 27 1926
New York Transit	3.40
Bradford District	3.40
National Transit	3.30
Southwest	3.30
Eureka	3.25
Macksburg	3.05
Gaines	2.85
Somerset medium	2.50
Somerset light	2.65
Cabell	2.40
Ragland	1.25
Corning	2.55
Keister	2.05

CENTRAL STATES

Illinois	2.37
Indiana	2.25
Lima	2.48
Plymouth	1.90
Princeton	2.37
Waterloo	1.35
Wooster	2.55

WESTERN KENTUCKY

Posted by Stoll Refining Company for crude from Allen, Warren, Franklin, Davies, Barren, Cumberland and Monroe Counties

All grades	2.65

MID-CONTINENT

	Prairie Sinclair* Texas Gulf	Magnolia
Below 28	...	1.30
28 to 28.9 gravity	1.65	1.65
29 to 29.9 gravity	1.73	1.73
30 to 30.9 gravity	1.81	1.81
31 to 31.9 gravity	1.89	1.89
32 to 32.9 gravity	1.97	1.97
33 to 33.9 gravity	2.05	2.05
34 to 34.9 gravity	2.13	2.13
35 to 35.9 gravity	2.21	2.21
36 to 36.9 gravity	2.29	2.29
37 to 37.9 gravity	2.37	2.37
38 to 38.9 gravity	2.45	2.45
39 to 39.9 gravity	2.53	2.53
40 to 40.9 gravity	2.61	2.61
41 to 41.9 gravity	2.69	2.69
42 to 42.9 gravity	2.77	2.77
43 to 43.9 gravity	2.85	2.85
44 to 44.9 gravity	2.93	2.93
45 to 45.9 gravity	3.01	3.01
46 to 46.9 gravity	3.09	3.09
47 to 47.9 gravity	3.17	3.17
48 to 48.9 gravity	3.25	3.25
49 to 49.9 gravity	3.33	3.33
50 to 50.9 gravity	3.41	3.41
51 to 51.9 gravity	3.49	3.49
52 and above	3.57	3.57

NORTH AND CENTRAL TEXAS

Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran, Somerset, Big Lake and Nocona crude

Humble O. & R. Co.* and Texas Co.

28 to 28.9 gravity	1.65
29 to 29.9 gravity	1.73
30 to 30.9 gravity	1.81
31 to 31.9 gravity	1.89
32 to 32.9 gravity	1.97
33 to 33.9 gravity	2.05
34 to 34.9 gravity	2.13
35 to 35.9 gravity	2.21
36 to 36.9 gravity	2.29
37 to 37.9 gravity	2.37
38 to 38.9 gravity	2.45
39 to 39.9 gravity	.253
40 to 40.9 gravity	2.61
41 to 41.9 gravity	2.69
42 to 42.9 gravity	2.77
43 to 43.9 gravity	2.85
44 to 44.9 gravity	2.93
45 to 45.9 gravity	3.01
46 to 46.9 gravity	3.09
47 to 47.9 gravity	3.17
48 to 48.9 gravity	3.25
49 to 49.9 gravity	3.33
50 to 50.9 gravity	3.41
51 to 51.9 gravity	3.49
52 and above	3.57

Corsicana Heavy $1.25 per barrel, posted by Magnolia.

*Until further notice, Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes purchased by the Humble Oil and Refining Company, of a gravity lower than 28 degrees will be paid for with a corresponding decrease of eight (8) cents per barrel for each lower degree of gravity.

SOUTH TEXAS

	Oct. 27 1926
Mirando	1.25

SOMERSET

Grayburg and Pioneer

28 to 28.9	1.25
29 to 29.9	1.30
30 to 30.9	1.36
31 to 31.9	1.54
32 to 32.9	1.62
33 to 33.9	1.70
34 to 34.9	1.78
35 to 35.9	1.86
36 to 36.9	1.94
37 to 37.9	2.02
38 and up	2.10

GULF COAST

All fields except Spindletop

Grade "A" all companies	1.40
Grade "B"	1.40
Gulf Coast Light Oil, Below 25	1.40
25 to 25.9	1.45
26 to 26.9	1.50
27 to 27.9	1.55
28 to 28.9	1.60
29 to 29.9	1.65
30 to 30.9	1.70
31 to 31.9	1.75
32 to 32.9	1.80
33 to 33.9	1.85
34 to 34.9	1.90
35 to 35.9	1.95
36 to 36.9	2.00
37 to 37.9	2.05
38 to 38.9	2.10
39 to 39.9	2.15
40 and above	2.20

*Humble Oil and Refining Company's postings on Gulf Coast Light stop at 35 to 35.9. Its price on all crude above 35 is $1.95 per barrel.

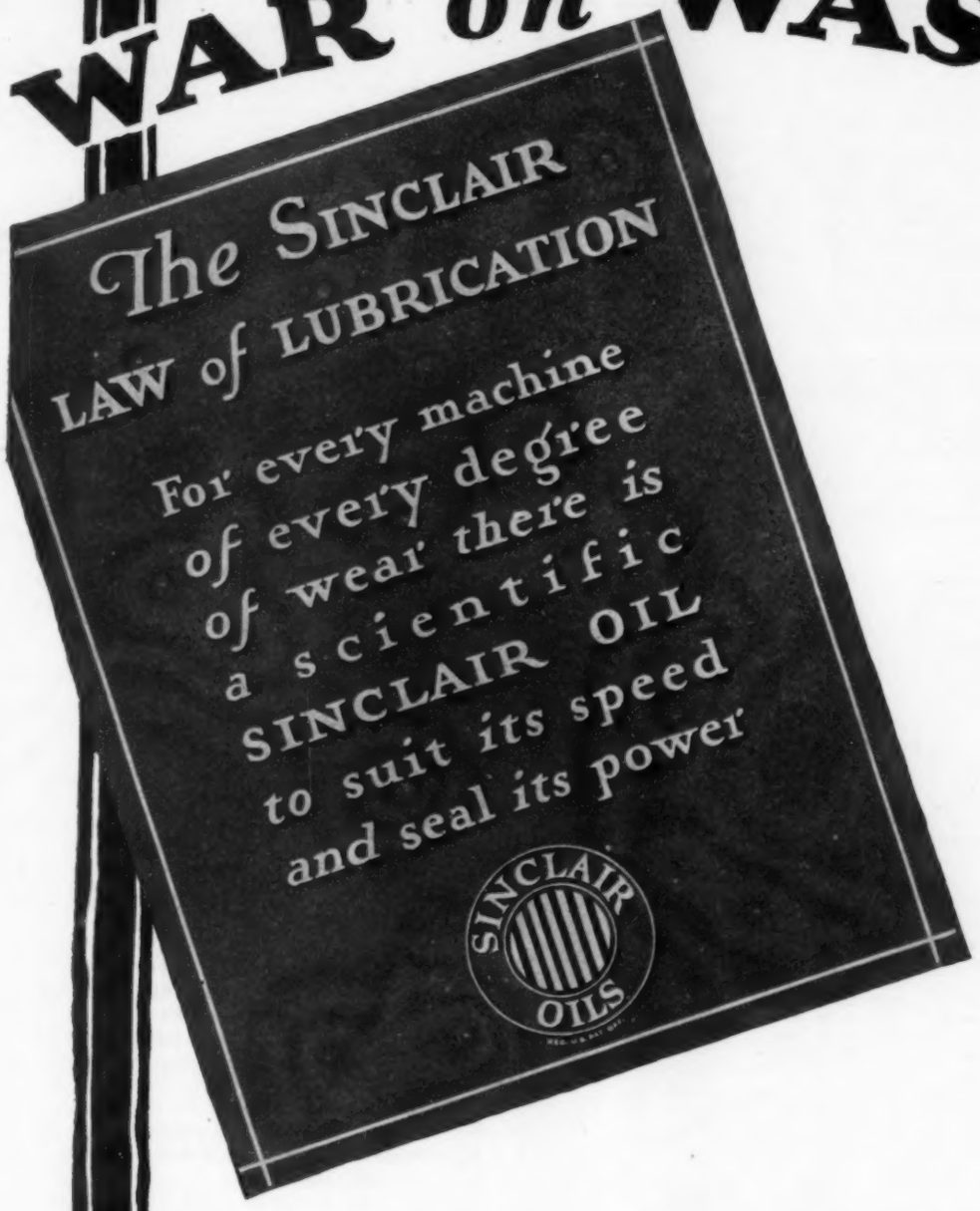
(Continued on page 58)

California Crude Oil Prices at the Well

Following are the current prices offered by Standard Oil Company for crude oil at the well: (Price per barrel of 42 gallons in fields indicated)

Gravity (degrees)	Signal Hill	Huntington Beach	Inglewood	Olinda-Brea Canon	Rosecrans Dominguez	Torrance	Richfield	Whittier	La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall	Midway-Sunset Elk Hills	McKittrick	Lost Hills	Coalinga	Kern River	Wheeler Ridge
14-14.9	$ .85	$ .85	$ .85	$ .85	$ ..	$ .85	$ .85	$ .85	$ .85	$ .85	$ .85	$ ..	$ .75	$ .75	$ .75	$ .75	$ .75	$ .75	$ .75
15-15.9	.87	.87	.87	.87	..	.87	.87	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75	.75
16-16.9	.90	.90	.90	.90	..	.90	.90	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75	.75
17-17.9	.94	.94	.94	.94	..	.94	.94	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75	.75
18-18.9	.98	.98	.98	.98	..	.98	.98	.86	.86	.86	.86	..	.75	.75	.75	.75	.75	.75	.75
19-19.9	1.04	1.04	1.04	1.04	..	1.04	1.04	.87	.87	.87	.87	..	.75	.75	.75	.75	.75	.75	.75
20-20.9	1.10	1.10	1.10	1.10	..	1.10	1.10	.89	.89	.89	.90	..	..	.82	..	.82	.79	..	.78
21-21.9	1.16	1.16	1.16	1.16	..	1.16	1.16	.91	.91	.91	.98	..	..	.90	..	.90	.86	..	.81
22-22.9	1.22	1.22	1.22	1.22	..	1.22	1.22	.94	.94	.94	1.06	..	..	1.00	..	1.00	.93	..	.85
23-23.9	1.28	1.28	1.28	1.28	..	1.28	1.28	..	..	.97	1.14	..	..	1.11	..	1.11	1.00	..	.89
24-24.9	1.34	1.34	1.34	1.34	1.34	1.34	1.34	..	..	1.01	1.22	1.02	..	1.22	..	1.22	1.07	..	.93
25-25.9	1.40	1.40	1.40	1.40	1.40	1.40	1.40	..	..	1.05	1.30	1.08	..	1.33	..	1.33	1.14	..	.97
26-26.9	1.46	1.46	1.46	1.46	1.46	1.46	1.46	..	..	1.09	1.38	1.16	..	1.44	..	1.44	1.21	..	1.01
27-27.9	1.52	1.52	1.52	1.52	1.52	1.52	1.52	..	..	1.13	1.46	1.24	..	1.55	..	1.55	1.28	..	1.05
28-28.9	1.58	1.58	1.58	1.58	1.58	1.58	1.58	..	..	1.17	1.54	1.32	..	1.66	..	1.66	1.35	..	..
29-29.9	1.64	1.64	..	1.64	1.64	..	1.64	..	..	1.21	1.62	1.40	..	1.77	..	1.77	1.42	..	..
30-30.9	1.70	1.70	..	1.70	1.70	..	1.70	..	..	1.25	1.70	1.48	..	1.88	..	1.88	1.49	..	..
31-31.9	1.76	1.76	..	..	1.76	..	..	..	..	..	..	1.60	..	1.99	..	1.99	1.56	..	..
32-32.9	1.84	1.84	..	..	1.84	..	..	..	..	..	..	1.72	..	2.10	..	2.10	1.63	..	..
33-33.9	..	..	..	..	1.92	..	..	..	..	..	..	1.84	..	2.21	..	2.21	1.70	..	..
34-34.9	..	..	..	.	2.00	..	..	..	..	..	..	1.96	..	..	..	2.32	1.77	..	..
35-35.9	..	..	..	..	2.08	..	..	..	..	..	..	2.08	..	..	..	..	1.84	..	..
36-36.9	..	..	..	..	2.16	..	..	..	..	..	..	2.16	..	..	..	..	..	..	..
37-37.9	..	..	..	..	2.24	..	..	..	..	..	..	2.24	..	..	..	..	..	..	..
38-38.9	..	..	..	..	2.34	..	..	..	..	..	..	2.31	..	..	..	..	..	..	..
39-39.9	..	..	..	..	2.44	..	..	..	..	..	..	2.44	..	..	..	..	..	..	..
40-40.9	..	..	..	..	2.54	..	..	..	..	..	..	..	..	..	..	..	..	..	..
41-41.9	..	..	..	..	2.64	..	..	..	..	..	..	..	..	..	..	..	..	..	..
42-42.9	..	..	..	..	2.74	..	..	..	..	..	..	..	..	..	..	..	..	..	..

WAR on WASTE!



THE motorist, in buying oil, is entitled to correct lubrication for his engine—and it is the dealer's responsibility to see that he gets it. Sinclair feels that responsibility—and therefore manufactures Opaline Motor Oil to sell according to the Sinclair Law of Lubrication—a different grade of Opaline Motor Oil "for every degree of wear" of the engine.

This means correct lubrication and economical transportation. It is the motorist's protection against *Waste of Power* and wearing of parts. This is the Sinclair dealer's method of making more satisfied customers.

SINCLAIR REFINING COMPANY
45 Nassau Street, New York
Atlanta Detroit Kansas City Chicago Houston Omaha

SINCLAIR OPALINE MOTOR OIL
REG. U. S. PAT. OFF.

1916-26—TEN YEARS OF MANUFACTURING AND DISTRIBUTING PETROLEUM PRODUCTS OF QUALITY

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SPINDLETOP LIGHT

Oct. 27 1926

Posted by Gulf Pipe Line Company, Humble Oil and Refining Company, Magnolia and Texas Company. Other companies buying Spindletop crude on regular Gulf Coast basis as shown above.

Below 25 gravity	*1.25
25 to 25.9	1.30
26 to 26.9	1.35
27 to 27.9	1.40
28 to 28.9	1.45
29 to 29.9	1.50
30 to 30.9	1.55
31 to 31.9	1.60

*The Texas Company does not post prices on this grade.

SPINDLETOP HEAVY

The following prices are posted only by the Gulf, Magnolia and Sun Companies:

Grade "A"	1.25
Grade "B"	1.15

LULING

Based on Contract	1.30

TEXAS PANHANDLE

Magnolia Petroleum Company

Hutchinson, Carson and Gray counties, all grades	1.25

Humble Oil & Refining Company

Hutchinson, Carson and Wheeler counties, all grades	1.25

Gray County

28 to 28.9 gravity	$1.10
29 to 29.9	1.15
30 to 30.9	1.20
31 to 31.9	1.25
32 to 32.9	1.30
33 to 33.9	1.35
34 to 34.9	1.40
35 to 35.9	1.45
36 to 36.9	1.50
37 to 37.9	1.55
38 to 38.9	1.60
39 to 39.9	1.65
40 to 40.9	1.70
41 to 41.9	1.75
42 to 42.9	1.80
43 to 43.9	1.85
44 and above	1.90

Crane-Upton-Crockett Counties

Below 26 gravity	.80
26 to 26.9	.85
27 to 27.9	.90
28 to 28.9	.95
29 to 29.9	1.00
30 to 30.9	1.05
31 to 31.9	1.10
32 to 32.9	1.15
33 to 33.9	1.20
34 to 34.9	1.25
35 to 35.9	1.30
36 and above	1.35

Crane-Upton Counties
Kay County Gas Company

Below 26 gravity	.80
26 to 26.9	.85
27 to 27.9	.90
28 to 28.9	.95
29 to 29.9	1.00
30 to 30.9	1.05
31 to 31.9	1.10
32 to 32.9	1.15
33 to 33.9	1.20
34 to 34.9	1.25
35 to 35.9	1.30
36 and above	1.35

Kay County Gas Company and Gulf Pipe Line Company

Hutchinson and Carson Counties, All grades	$1.25

WYOMING-MONTANA

Wyoming

Byron	2.25
Ferris	1.53
Elk Basin	2.40
Grass Creek	2.40
Rock Creek	2.40
Lost Soldier	1.10
Lance Creek	2.40
Mule Creek	1.75
Notches	.65
Big Muddy	2.25
Osage	2.15
Hamilton Dome	.73
Pilot Butte	1.75
Torchlight-Greybull	2.15
Lander	1.10

Salt Creek
(Midwest Refining Company)

Oct. 27 1926

29 to 29.9 gravity	1.73
30 to 30.9 gravity	1.81
31 to 31.9 gravity	1.89
32 to 32.9 gravity	1.97
33 to 33.9 gravity	2.05
34 to 34.9 gravity	2.13
35 to 35.9 gravity	2.21
36 to 36.9 gravity	2.29
37 to 37.9 gravity	2.37

Montana

Sunburst	1.35
Cat Creek	2.15

NEW MEXICO

Artesia	1.95
Hogback	1.95

CANADIAN CRUDE

Oil Springs	2.95
Petrolia	2.80

*Bounty on Canadian crude is ¾ cent per gallon, or 26¼ cents per barrel.

LOUISIANA-ARKANSAS

Caddo Light

38 gravity and above	2.45
35 to 37.9 gravity	2.35
32 to 34.9 gravity	2.25
*Below 32 gravity	2.10

Caddo Heavy

Below 26.0	1.40
26 to 28.9	1.55
29 to 31.9	1.70

Homer

Below 31 gravity	1.85
35 gravity and above	2.20
33 to 34.9 gravity	2.10
31 to 31.9 gravity	2.00

Cotton Valley

All Grades	1.20

Haynesville

33 gravity and above	2.10
Below 33 gravity	2.00

Pine Island
(Posted by Magnolia)

Below 26	1.40
26 to 28.9	1.55
29 to 31	1.70
32 to 34.9	2.25
35 to 37.9	2.35
38 and above	2.45

Bull Bayou

38 gravity and above	2.25
35 to 37.9 gravity	2.10
32 to 34.9 gravity	1.95
De Soto crude	2.30
Crichton	2.10
Bellevue	1.40
Jennings	1.50
Vinton	1.50
Edgerly crude	1.50
Urania	1.10

Smackover
(Standard, Gulf, Louisiana, Shreveport-El Dorado and Atlanta)

27 and above	1.50
26 to 26.9 gravity	1.45
25 to 25.9 gravity	1.40
24 to 24.9 gravity	1.35
Below 24 gravity	1.10

The Texas Company

27 and above	1.50
26 to 26.9 gravity	1.45
25 to 25.9 gravity	1.40
24 to 24.9 gravity	1.30
Below 24 gravity	1.10

El Dorado and Lisbon
(Atlantic)

37 and above at 60 degrees	2.30
35 to 36.9 gravity	2.20
33 to 34.9 gravity	2.10
Below 33 gravity	2.00
East Field (Calion)	.95

Stephens District

26 gravity and above	1.65
Below 26 gravity	1.45

*The Texas Company's posting on below 32 gravity is $1.85.

Hopes for New Arkansas Field Get Another Reversal

Shreveport, La.—Realization of the hopes of Arkansas operators for a new field in the Urbana-Lawson district of Union County has been postponed again, although a recent test in the Marine Oil Company's Thompson well had been counted upon to reveal the presence of an oil reservoir. However, the Marine well, which is located in section 10-18-13, did yield about five million cubic feet of gas from two feet of sand at 2539-31. After it had blown gas for about six hours, it was mudded off and drilled five feet deeper. The second test brought forth a spray of salt water, although the volume of gas was not increased. Neither test brought out any showing of oil.

The Simms Oil Company, owner of the so-called discovery well in this new area, has discontinued drilling operations at a depth of 3115 feet in its Simmons well in section 9-18-13; and preparations are now being made to plug back to the Blossom sand in an effort to retrieve the gas production which was found and passed up at that depth.

There are now ten tests in progress or in prospect in the Urbana-Lawson area.

Production from the new Dixie-Belcher field in township 20-15, south of the Pine Island field in Caddo Parish, Louisiana, has fallen to around 2135 barrels per day, with the death of Victor Wenzel's discovery well and the decline of the flow from The Texas Company's Curtis well. The latter is now making around 1835 barrels per day, and the Magnolia Petroleum Company's Wemple well is flowing around 300 barrels per twenty-four hours.

The Natural Gas & Fuel Corporation, one of the more aggressive of the younger organizations in the Louisiana-Arkansas territory, brought in another gusher at Urania last week, where big wells are becoming uncommon as the field grows older. Its well No. M-7 on the Urania Lumber Company's land is flowing at the rate of 1500 barrels per day from nine feet of sand at a total depth of 1574 feet. It is producing sand in large quantities, as did many of the more spectacular wells in this field. Generally speaking, wells which disgorged large quantities of sand have produced much more oil and have flowed longer than wells which did not.

The Humble Oil & Refining Company is still plugging away at its gigantic wildcatting campaign in southwestern Arkansas. The bit has passed the 3100 foot level in its Bodcau deep test in section 9-15-22, near the Irma field, in Nevada County.

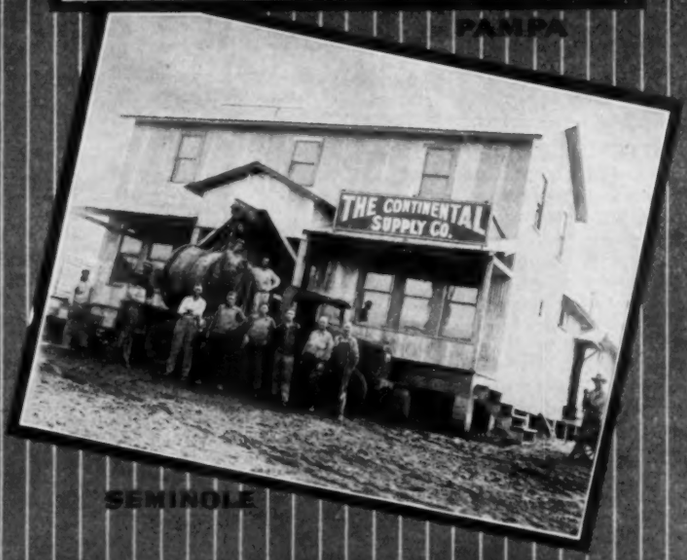
The Magnolia Petroleum Company brought in two deep gas wells on its Dillion Lease, in the Pine Island district of Caddo Parish, last week. No. 16, in section 24-21-15 yielded only five million cubic feet at 3672 feet. It will be drilled deeper. No. 17, on the same tract, produced 35 million cubic feet of gas with at least 10,000 barrels of salt water and a showing of oil from a depth of 3644 feet.

W. R. Ramsey, of Tulsa, who in asso-

3 New CONTINENTAL STORES

HEBORNVILLE

PAMPA



SEMINOLE

AS the frontiers of Oil advance, the vanguard of Continental Service advances with them. Three recent additions to the long list of Continental stores are shown here.

15 stores in 1912—more than 70 today! This is the result of dependable equipment, large local stocks, and intelligent personal attention to customers' needs.

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CONTINENTAL

Say you saw it in The OIL WEEKLY

ciation with the Southern Crude Oil Purchasing Company, is drilling a deep test on the Gilliland Oil Company's Taylor lease at Haynesville, has suspended drilling at a depth of approximately 4290 feet. It is said that it is planned to plug back to the sand at which a favorable showing of oil was found and try to complete the well as a pumper.

Montana Runs Not Reported

Great Falls, Mont.—A great deal of confusion has resulted from the entrance into the Kevin-Sunburst field of several independent pipe lines—at least as far as reliable data on the quantity of oil transported is concerned. Oil delivered to Canada does not come under the jurisdiction of the state land board and has not been reported regularly by the Illinois Pipe Line Company, which is reported to be moving 15,000 barrels daily from the field. Several indepedent interests are also taking care of their own oil.

Resume Drilling

Casper, Wyo.—Drilling has been resumed on the Hughes Royalty Company's test on the northern slope of the Mahoney field, section 25-26-88, after a five months' shut-down. Enough oil and gas for commercial production was found at 3375 feet but the officials of the company were not satisfied to let the well stand as a 35-barrel producer. When the well was uncapped a week ago the production was better than when shut in. The gas pressure had also increased. It will be remembered that the Hughes interests drilled the largest producer ever completed in the Lost Soldier field. They immediately sold their interests in the lease. Production declined rapidly after the transaction and the ultimate outcome proved the wisdom of the transaction. The company is still heavily interested in acreage in and near the Ferris, Mahoney and Lost Soldier fields.

Panhandle Production

Amarillo, Texas—Daily average production in the five counties producing oil in the Texas Panhandle district for the past week is listed below by companies, with the total producing wells included:

	Number Wells	Average Daily Prod.
CARSON COUNTY—		
American Refining Company	7	530
Empire Gas & Fuel Company	1	25
Gates Oil Company	1	10
Gulf Production Company	16	300
Marland Oil Company	12	1,880
Republic Production Co.	1	20
Roxana Petroleum Corporation	1	225
W. W. Silk et al	3	175
Skelly Oil Company	2	100
Sunny Jim Oil Company	2	45
The Texas Company	11	255
Totals	57	3,565
GRAY COUNTY—		
Empire Gas & Fuel Co.	1	10
Gulf Production Company	6	2,260
Magnolia Petroleum Co.	4	200
McMan Oil & Gas Company	1	450
Phillips Petroleum Co.	1	85
Prairie-Shamrock Pet. et al	3	955
Pure Oil Company	1	65
The Texas Company	1	10
Wilcox Oil & Gas Company	11	4,600
Young et al	1	100
Totals	30	8,735
HUTCHINSON COUNTY—		
Alaska Petroleum Company	1	50
Amerada Petroleum Corp.	9	640
American Refining Company	3	620
Apex Oil Company	2	280
Badger Oil Company	2	130
R. G. Barnum et al	1	50
Buffalo Oil Company	1	60
Canadian River Oil Co.	5	425
Canyon Oil Co. (C. C. Julian)	5	8,005
Center Dome Oil Company	1	10
Cline & Douglas Oil Company	1	10
Coble-Whittenburg Oil Co.	4	855
Cockrell-McIlroy Oil Co.	4	635
Continental Oil Co. (Texhoma)	1	15
Currie Bros. & J. R. Phillips	2	195
Delmar Oil Company	1	65
Derby Oil Co. et al	4	1,240
Devonian Oil Company	4	730
Dixon Creek Oil Company	22	6,525
Double Five Oil Company	1	65
E. J. Dunnigan et al	1	650
J. B. Dunnigan et al	2	310
Echo Oil Company	3	2,150
Empire Gas & Fuel Co.	7	4,950
Fly-Blackburn Oil Co.	2	280
Gates Oil Company	4	400
Goldelline Oil Company	3	295
Golding-Phillips Oil Co.	1	.....
Gulf Production Company	24	5,125
Gulf-Cline-Panhandle Ref. Co.	38	7,360
W. Scott Heywood etl al	2	80
W. H. Holmes et al	1	95
Holmes-Currie & McKnight	3	355
J. K. Hughes Development Co.	15	3,000
Japhet Production Co. et al	4	810
Lenix et al	1	5
Lucky Ten Oil Company	3	715
Marland Oil Company	43	16,815
S. D. McIlroy	1	225
S. D. and W. W. McIlroy	7	1,400
McIlroy Oil Company	3	400
McIlroy-Herring Oil Company	4	490
McMan Oil & Gas Company	17	10,500
J. H. Middleton et al	3	65
Mid-West Exploration Co. et al	6	1,115
Minnehoma Oil Co. & Kistler	1	80
Murchison-Fain Oil Company	2	425
Newby Oil Company	1	85
New Domain Oil & Gas Co.	3	175
Pantex Oil Company (Westex)	9	3,400
Pattison-Lenix Oil Company	1	300
J. R. Phillips	1	20
J R. Phillips et al	2	100
J. R. Phillips-W. Scott Heywood	2	1,950
Phillips Petroleum Co., et al	82	34,500
Prairie-Phillips Pet. Co. et al	27	4,920
Relief Oil Company	3	910
Henry Riley et al	1	240
Henry Riley & W. H. Holmes	2	575
Roxana Petroleum Corporation	8	1,370
Ryan Con. Pet. Corp (Morton)	3	465
Skelly Oil Company	14	7,500
Skiatex Oil Company	4	910
J. L. Smith	2	300
Smith-Bynum et al	2	270
Spring Creek Oil Company	4	855
Summit Oil Company	2	325
Sunburst Oil Company	2	1,255
Sunrise Oil Company	1	15
Sunny Jim Oil Company	5	650
Travelers Oil Company	2	635
Triangle Oil Company	2	2,390
J. D. Ward et al	2	100
White Eagle Oil & Ref. Co. et al	17	3,315
Totals	478	146,230
POTTER COUNTY—		
Amarillo Oil Company	1	30
WHEELER COUNTY—		
Continental Oil Co. (Texhoma)	2	215
Gibson Oil Corp, et al	2	140
Mid-Kansas Oil & Gas Company	1	30
Mid-West Exploration Co. et al	3	25
Totals	8	410
Grand total for past week	574	158,970
Grand total for previous week	538	152,210

AVERAGE DAILY PRODUCTION FOR U.S.

United States Daily Average Production by Weeks

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

Week Ending	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Total
February	450,037	101,937	245,989	91,550	45,090	169,676	99,000	98,412	605,250	1,909,637
March	454,762	103,300	260,262	92,712	48,787	165,312	97,625	102,325	604,500	1,929,562
April	467,175	101,825	263,612	88,812	50,562	169,824	100,875	106,675	600,000	1,947,387
May	463,750	105,690	277,700	94,550	58,150	175,430	105,700	112,300	602,720	1,995,990
June	456,450	107,637	302,187	89,912	60,412	167,887	106,250	112,925	606,925	2,013,187
July	456,920	110,320	336,600	114,760	57,460	161,870	104,700	108,520	613,940	2,062,470
August	465,137	111,600	381,560	161,237	56,787	157,375	108,350	110,737	609,725	2,162,662
September	465,387	113,037	402,212	175,512	56,575	154,037	110,125	105,825	598,100	2,180,862
October 2	470,500	115,150	413,250	174,400	58,200	151,100	110,000	101,650	600,000	2,194,250
October 9	474,950	114,800	430,350	167,450	57,900	150,150	109,500	96,600	602,500	2,204,200
October 16	486,150	114300	443,050	166,750	57,000	149,900	109,000	99,700	608,300	2,234,150
October 23	514,700	114,600	451,350	172,000	58,450	149,850	109,000	97,400	618,900	2,286,250
Increase over past week	28,550	300	8,300	5,250	1,450	.....	.....	.....	10,600	52,100
Decrease over past week	.....	.....	.....	.....	.....	50	.....	2,300	.....	.....

Texas

NORTH TEXAS

	Oct. 25	Oct. 18
Burkburnett	13,750	13,600
Electra	16,600	16,600
Iowa Park K-M-A	3,800	4,050
Wilbarger	14,000	13,950
Hutchinson County	147,950	143,050
Panhandle Misc.	14,000	11,600
Petrolia	700	700
Montague County	8,300	7,300
Archer County	32,500	32,700
Others	850	800
Totals	252,450	244,350

EAST CENTRAL TEXAS

Mexia	11,200	11,200
Currie	750	750
Richland	1,350	1,350
Corsicana-Powell	24,200	24,300
Wortham	6,000	6,050
Nigger Creek	11,800	12,250
Totals	55,300	55,900

WEST CENTRAL TEXAS

Stephens County	10,700	10,700
Eastland County	5,450	5,500
Desdemona	1,700	1,700
Young County	7,100	6,950
Palo Pinto County	400	400
Callahan County	4,100	4,150
Shackelford County	8,950	8,850
Reagan County	29,800	29,250
Brown County	12,650	12,950
Coleman County	1,600	1,600
Crane-Upton Counties	11,850	11,000
Mitchell County	3,700	3,650
Others	2,800	2,450
Totals	100,800	99,150

SOUTHWEST TEXAS

Luling	20,450	20,650
Laredo District	16,250	16,850
Somerset	1,950	1,950
Lytton Springs	3,600	3,650
Piedras Pintas	50	.....
Others	500	500
Totals	42,800	43,650
Totals Tex. outside Gulf Coast	451,350	443,050

GULF COAST

Goose Creek	7,450	7,500
Hull	22,700	22,650
Saratoga	1,250	1,450
Blue Ridge	1,850	1,950
Damon Mound	1,000	850
Batson	1,600	1,600
West Columbia	8,700	8,900
Humble	3,800	3,750
Pierce Junction	5,200	3,600
Sour Lake	7,900	7,750
Spindletop	82,900	78,900
Orange County	6,650	6,700
Edgerly	850	1,000
Evangeline	1,250	1,050
Vinton	5,800	6,000
Lockport	4,100	4,150
South Liberty	3,650	4,050
Big Creek	1,250	1,300
Boling	2,150	2,150
Others	1,950	1,650
Totals	172,000	166,750

Oklahoma

North Braman	23,550	14,800
South Braman	6,450	6,750
Blackwell	3,850	3,900
Hubbard	2,600	2,650
Thomas	2,000	1,800
Tonkawa	32,250	36,350
Garber	24,650	25,000
Burbank	49,100	49,150
Osage (outside Burbank)	34,300	34,400
Watchorn	3,950	4,150
Cushing	21,500	21,450
Yale Jennings	13,350	13,750
Davenport	5,650	5,400
Bristow Slick	27,100	27,150
North Okmulgee	17,450	17,450
Lyons Deaner	3,950	3,950
Stroud	2,000	2,000
Cromwell	15,150	15,100
Papoose	9,200	9,500
Wewoka	26,550	26,950
Duncan District	7,350	7,400
Graham	10,650	10,600
Fox	6,500	6,500
Healdton	14,950	14,950
Hewitt	11,150	11,150
Seminole	69,600	47,200
Others	66,900	66,700
Totals	514,700	486,150

California

Santa Fe Springs	47,500	47,500
Long Beach	95,000	95,000
Huntington Beach	60,000	53,000
Torrance	27,000	27,000
Dominguez	21,500	21,000
Rose Crans	14,000	13,000
Inglewood	41,000	41,000
Midway-Sunset	94,000	94,000
Ventura Avenue	94,900	48,800
Others	169,000	168,000
Totals	618,900	608,300

Kansas

Florence Covert	1,950	1,950
Peabody Elbing	4,100	4,150
Eldorado Towanda	13,700	13,750
Augusta Fox-Bush	5,000	5,000
Rainbow Bend	3,400	3,400
Russell	4,500	4,500
Greenwood County	44,750	44,200
Others	37,250	37,350
Totals	114,600	114,300

North Louisiana

Homer	5,550	5,550
Haynesville	9,100	9,150
Caddo Light	9,850	9,800
Caddo Heavy	4,450	2,800
Desoto Red River	4,050	4,050
Elm Grove	550	550
Bellevue	2,100	2,050
Cotton Valley	7,550	7,600
Urania	15,250	15,450
Totals	58,450	57,000

Arkansas

El Dorado	6,800	6,950
Smackover Light	13,800	14,000
Smackover Heavy	118,350	117,850
Stephens	1,550	1,600
Nevada	1,800	1,850
Lisbon	7,550	7,650
Totals	149,850	149,900

Mountain States

WYOMING

Salt Creek	45,150	45,900
Grass Creek	3,100	3,100
Elk Basin	850	800
Big Muddy	3,200	3,300
Lost Soldier	5,150	5,150
Rock River	2,950	2,750
Teapot Dome	1,050	1,050
Lance Creek	1,000	1,050
Others	2,200	2,150
Total	64,650	65,250

MONTANA

Cat Creek	2,500	2,600
Sunburst	18,000	18,000
Others	250	200
Totals	20,750	20,800

COLORADO

Moffats (Craig)	2,850	3,100
Fort Collins	3,450	3,550
Florence	450	450
Others	750	800
Totals	7,500	7,900

NEW MEXICO

Table Mesa	250	700
Artesia	3,000	3,000
Hogback	700	750
Rattlesnake	550	1,300
Totals	4,500	5,750
Total Mt. States	97,400	99,700

EASTERN STATES

Including Ill., Ind., Ohio Pa., W. Va., Ky and N. Y.	109,000	109,000

PRODUCTION SUMMARY

East of Rockies		1,526,150
United States	2,286,250	2,234,150

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

Summarized Review of Field Results

State—	Completions This Week	Completions Last Week	Producers This Week	Producers Last Week	Gas Wells This Week	Gas Wells Last Week	Failures This Week	Failures Last Week	Initial Production This Week	Initial Production Last Week
Arkansas	18	24	12	19	3	1	3	4	960	1,275
California	20	23	18	22	..	..	2	1	15,199	4,981
Colorado	..	..	..	..	..	..	..	..	....	.....
Indiana	2	10	1	4	1	3	..	3	1	95
Illinois	9	6	4	6	..	..	5	..	240	12
Kansas	37	16	22	7	2	..	13	9	2,874	710
Kentucky	26	27	20	20	1	2	5	5	336	180
Louisiana	16	25	13	10	2	2	1	13	5,870	2,455
Michigan	5	5	5	5	..	..	..	..	98	128
Mississippi	..	..	..	..	..	..	..	..	....	.....
Montana	8	11	8	6	..	..	..	5	650	170
New York	22	10	22	10	..	..	..	..	50	32
New Mexico	2	..	1	..	..	..	1	..	150	.....
Ohio	21	40	15	76	3	8	3	6	403	357
Oklahoma	110	87	67	50	7	5	36	32	23,385	9,213
Pennsylvania	71	72	58	63	9	6	4	3	156	706
Tennessee	..	3	..	3	..	..	..	..	....	400
Texas	209	211	140	135	4	9	65	66	70,644	56,445
Utah	..	..	..	..	..	..	..	..	....	.....
West Virginia	36	34	16	9	14	16	6	9	129	76
Wyoming	7	19	6	18	..	..	1	1	670	1,860
Totals	619	623	428	414	46	52	145	157	121,815	78,955

Texas

ARCHER COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
American Ref. Co. et al's Turbeville 6	30	1499
Turbeville 1-B	15	1505
Continental Oil Co. & Maer's K. & K. 2	*	1870
Continental Oil Co. & Sheldon's Parrish 1	20	1602
Continental Oil Co. et al's Thomas 3	*	1180
Consolidated Oil Co.'s Kinder 1	*	1350
Golding-Cochran et al's F. R. Smith 1	*	1253
Morrison 2	*	1215
Humble O. & R. Co.'s Hamilton 18.	180	1268
Litchfield & Decker's Ground 1	*	2004
Magnolia Pet. Co.'s A. J. Lowe 25.	75	1298
Marland Oil Co.'s Thomas 5-B	20	1179
Tubeville 6	10	1525
Turbeville 9	670	1521
McCarty Oil Co.'s Dilday-Wilson 5	40	1588
Murchison-Fain Oil Co.'s Logan 5-B	30	1140
Pandem Oil Corp.'s L. L. Hudson 4	20	1155
L. L. Hudson 5	30	1149
Shappell Oil Co.'s Turbeville 4	†	1450
Simms Oil Co.'s Turbeville 3-A	*	1541
Turbeville 10-A	100	1517
The Texas Co.'s Richardson 15	15	1349
Turbeville 13-C	500	1519
Tidal Oil Co.'s Farmer 1	35	1495
Trammel & Moore's Harmonson 1	*	1005
United Producers & Grisham's Turbeville 1	*	1509

BIG LAKE

Company, Well and Location	Initial Production Bbls.	Depth
Big Lake Oil Co.'s University 79	150	2921
University 83	175	3002
Texon Oil & Land Co.'s University 49	105	2998
University 52	140	3070

BROWN COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Amerada Pet. Corp.'s J. H. Fry 2	240	1314
Barkley-Conway et al's Allen 6	125	1180
Bowers et al's Cason 2	10	1553
Campbell & Rosenfield's Smith 1	*	1558
J. S. Cosden et al's Wright 1	*	1450
DeBusk Oil Co.'s DeBusk 1	*	1446
Empire Gas & Fuel Co.'s Green 1	*	1552
Gibson O I Corp. et al's White 2	150	1244
Hoffer Oil Corp. et al's Runge 1	*	1700
Huffman et al's Kilgore Bros. 6	60	1188
Humble O. & R. Co.'s Hickman 1	50	1224
Hickman 4	150	1222
J. C. Kilgore 4-A	*	1270
Wooldridge 5	125	1272
Kone Prod. Co.'s Foster 7	75	1212
McLester Oil Co.'s W. M. Woodridge 11	130	1268
W. M. Wooldridge 13	75	1291
Mid-West Exploration Co.'s Suttles 3-A	*	1139
Parsons et al's Beard 1	*	1116
Eiland 1	*	1000
Phillips Pet. Co.'s Prather 4	25	1318
E. L. Smith Oil Co.'s Newton 2	10	1245
The Texas Co.'s Edrington 7	10	1283
Tidal Oil Co.'s Hodnett 1	120	1205
West & H-Y Oil Co.'s Newton 17	40	1219
Williamson et al's Keller 6	30	1162
Keller 7	40	1159

BURKBURNETT

Company, Well and Location	Initial Production Bbls.	Depth
Bridwell-Heydrick Oil Co.'s Fee 1.	250	1879
R. R. Clark & Campbell's Ward-Todd 1-I	*	1903
R. R. Clark et al's Ward-Todd 9	80	1898
Ward-Todd 10	100	1878
Barney Cockburn et al's Michna 1	*	1621
Magnolia Pet. Co.'s Hugh Reilly 129	*	2065
Ramming et al's Ramming 1	10	1690

CALLAHAN COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Cranfill-Reynolds Oil Co.'s Bond 3.	150	1401
Goodloe & Duffy's Jackson 2	*	1300
J. K. Hughes Dev. Co.'s Franke 1	*	2300
T. B. Slick et al's Bond 4	*	1407

CARSON COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Gulf Prod. Co.'s Burnett 18	155	3105
Burnett 19	¶9	3155

COLEMAN COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Andy Urban et al's Gray Ranch 1	25	2509

EASTLAND COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Arkansas Fuel Oil Co.'s Connellee 6	40	1231
Eastland Oil Co.'s Wright 4	¶3	1203
Mid-Kansas O. & G. Co.'s Farmers State Bank 1	*	2970

ELECTRA COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Continental Oil Co.'s Burnett 11-E	30	1585
Wayne Hammond et al's McCarty 8-A	*	1850
Hereford Oil Co.'s Allingham4-A	20	1385
J. E. Le Bus & Douglas' L. P. Douglas 1	15	1195
Magnolia Pet. Co.'s Honaker 14	10	1050
W. A. Patterson et al's L. P. Douglas 3	15	1173
Ray-Art & Consolidated Oil Co.'s 1	*	1955
Ryan Con. Pet. Corp.'s G. E. Nance 84	75	515
G. E. Nance 85	25	1377
G. E. Nance 86	7	151
Trinity Prod. Co.'s Burnett 18	*	1563

GRAY COUNTY

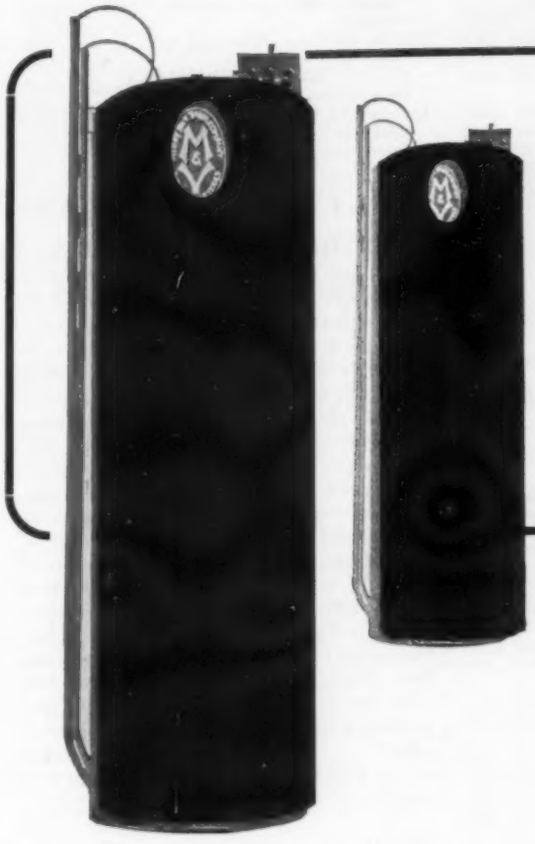
Company, Well and Location	Initial Production Bbls.	Depth
Gulf Prod. Co.'s P. A. Worley 3, shot	160	3017
Humble O. & R. Co.'s Worley-Reynolds 1	90	2985
Magnolia Pet. Co.'s W. W. Merten 4, shot	300	3080
W. W. Merten 8, shot	150	3040
W. W. Merten 9 ,shot	6	3077
Phillips Pet. Co.'s Merten Bros. 1, shot	210	3150

HUTCHINSON COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Currie Bros. & J. R. Phillips' Smith 3	75	2980
Dixon Creek Oil Co.'s Smith 17	400	2838
Smith 19	†	2710
Smith 35	50	2789
Gulf Prod. Co.'s E. Cockrell 2, shot	720	2960
E. Cockrell 3, shot	360	2946
E. B. Johnson 11	4210	2897
J. W. Whittenburg 3-E, shot	30	2784
L. R. Hagey's Johnson 1, shot	25	2735
J. K. Hughes Dev. Co.'s W. L. Kingsland 8, shot	2400	2795
Japhet Prod. Co. et al's Smith 5, shot	50	2867
Marland Oil Co.'s Johnson 7-A, shot	600	3005
McMan O. & G. Co.'s Johnson-Gray 4	3000	2938
Murchison-Fain Oil Co.'s W. D. Twichel 2, shot	150	2918
Phillips Pet. Co.'s J. J. Perkins-Martin 4, shot	140	2945
J. A. Whittenburg Burg 2	1200	2915
J. A. Whittenburg-Patsburg 1	†	2860
Phillips Pet. Co. & Gibson Oil Corp.'s W. L. Kingsland 3, shot	75	2850
J. A. Whittenburg 8, sec 63, shot	75	2952
J. A. Whittenburg 9, sec 63, shot	100	2925
J. R. Phillips et al's Smith 2	100	2834
Phairie O. & G. & Phillips Pet. Co.'s Johnson 4-B	9600	2878
Prairie-Shamrock Pet. Co.'s J. A. Whittenburg 4	190	2900

K-M-A AND IOWA PARK

Company, Well and Location	Initial Production Bbls.	Depth
Continental Oil Co.'s Chilson 1-A	15	1187
Jaffe et al's Mitchell 8	40	1868
George Pace et al's Edgerly 6-A	*	2005



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Company, Well and Location	Initial Production Bbls.	Depth
Perkins-Cullum & Stump's Chilson 7	65	1181
Simms Oil Co.'s Chilson 4	35	1182
Pat & Tom White's Mitchell 4-B	*	1877
NIGGER CREEK		
Transcontinental Oil Co.'s Medlock 4	350	2807
A. E. Rosson 13	50	2820
A. E. Rosson 13-A	60	2845
SHACKELFORD COUNTY		
Harry Gwinnup et al's Goodwin 1	*	2033
Hazelton et al's Weleam 1		*1202
Overlees et al's Mathews 3	*	1188
Roeser-Pendleton & Marland Oil Co.'s W. I. Cook 34-A, sec 84	*	1405
W. I. Cook 18-A, sec 85	185	1314
Nail Ranch 1, sec 121	*	2001
SOUTH VERNON DISTRICT		
Empire Gas & Fuel Co.'s Stephens 48	40	1327
Milham Corp.'s W. T. Waggoner 4-A	*	2885
W. T. Waggoner 9-H	40	2386
Phillips Pet. Co.'s W. T. Waggoner 6-H	200	2416
W. T. Waggoner 7-H	150	2416
W. T. Waggoner 10-NN	55	2574
W. T. Waggoner 11-NN	30	2390
Prairie O. & G. Co.'s W. T. Waggoner 1-B	16	2590
W. T. Waggoner 3-B	40	1860
STEPHENS COUNTY		
Chastain & Donley's Satterfield 1	*	3635
Livingston et al's Christenson 1	*	4200
Mid-Kansas O. & G. Co.'s Richardson 2	*	3718
Mook-Texas Oil Co.'s Bruce 1	*	2125
Pennock Oil Co.'s Martin 8	*	3886
Texas Fidelity Oil Corp.'s D. C. Pratt 2	18-280	2008
T. & P. Coal & Oil Co.'s Chas. Binney 67	65	1896

Company, Well and Location	Initial Production Bbls.	Depth
UPTON COUNTY		
Gulf Prod. Co.'s Mrs. Baker 1-B	130	2270
Humble O. & R. Co.'s A. S. Burleson 4	65	2186
Independent Oil & Gas Co.'s E. Wooley 3	400	2160
Marland Oil Co.'s A. S. Burleson 25	100	2145
A. S. Burleson 26	120	2165
A. S. Burleson 29	100	2175
A. S. Burleson 30	75	2205
Sanger Bros. 14	45	2270
The Texas Co.'s A. S. Burleson 3	45	2210
A. S. Burleson 4	80	2200
King 8	65	2128
YOUNG COUNTY		
Madden-Hunt et al's Benson 9	25	902
Roamer Oil Co. et al's McClatchey 2	*	1203
Roberts Oil Corp. et al's Rogers 15	35	870
The Texas Co.'s Prideaux 2	*	800
Womac Oil Co.'s Stewart 7	10	823
GULF COAST		
Spindletop—		
Gulf Production Co. Jas. F. Weed 9-A	1500	3350
Daisey Roche et al 8	1300	2800
Atlantic Oil Producing Co. McLean 12	4800	3300
Seiss et al Pierce 1	400	2500
Paggi & Company Gordon 3	*	3500
The Sun Company McLean 4.	4300	4050
Yount-Lee Oil Co. McFaddin 13	8000	4071
Davis 8	4200	3125
McFaddin 16	2100	4040
Sour Lake—		
J. F. Bashara Fee 3	150	3750
J. H. Antilley Jackson 1, wo	25	2200
Hull—		
Republic Prod. Co. Dolbear 136	1000	2500
No. 139	2500	2800
Pierce Junction—		
Rio Bravo Oil Co. P. F. Settegast 4.	2875	3650
Marland Oil Co. Prudent Investment Co. 1	150	3700

Company, Well and Location	Initial Production Bbls.	Depth
Orange—		
Rycade Oil Corp. State 1-C, wo	100	3910
SOUTH LOUISIANA		
Evangeline—		
Utropal Oil Co. Noble 1	70	1890
Lockport—		
Vacuum-Gulf Company Miller 10	500	5425

Ship First Car Shale Oil From Colorado Plant

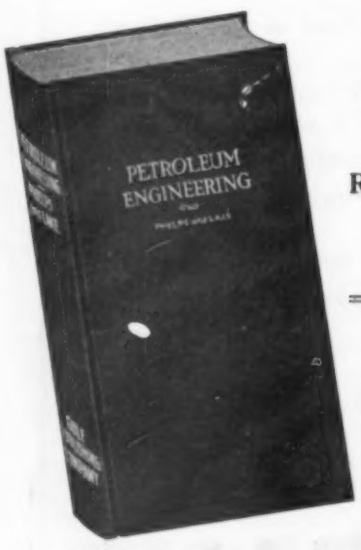
Denver, Colo.—The U. S. Bureau of Mines has shipped what is thought to be the first tank car of shale oil ever consigned from Colorado, or any other Rocky Mountain state. The oil was extracted from the government experimental plant near Rulison, Colorado, and was consigned to the various bureau stations throughout the country, to be used experimentally. Shale leaseholders contend that the shipment is the actual beginning of commercial production from shale lands. Thousands of acres of land have been leased in western Colorado during the year and small plants have been erected, but the actual extraction of shale oil has been negligible. The government has been the most consistent operator and produced the car of shale oil after much effort. Congress recently set aside about $100,000 for a shale experimental station.

Will Use Montana Crude At Regina Refinery

Great Falls, Mont.—The Standard Oil Company of New Jersey is considering substituting Kevin - Sunburst crude for Wyoming crude in its large refinery at Regina, Canada. Through its subsidiary, the Carter Oil Company, it has actively begun operations in the Montana field and has a small production available. For years the Carter Oil Company has shipped from 3000 to 5000 barrels daily from Wyoming fields to Canada. The contract with the Imperial Oil Company expires at the end of the year and the saving in freight by using Kevin-Sunburst crude will more than offset the lower gravity of Montana crude and the fact that it contains much more sulphur than Wyoming crude. The Imperial Oil Company's refinery at Regina will handle 5000 barrels daily but not more than 4000 barrels daily will be shipped from the Montana field, it is thought.

Midwest Conserves Salt Creek Oil

Casper, Wyo.—The Midwest Refining Company is continuing to conserve its Lakota sand oil in the Salt Creek field, despite the natural decline in production. The company has a large number of wells completed in the sand and several wells shut down on top of the sand. Officials of the company are anxious to conserve the oil as well as to prevent an overproduction of crude in the district.



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SOUTHWEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
Jim Hogg County—		
Simms Oil Company No. 5 Wade, Sec. 81, blk 8	70	1320
Medina County—		
Witherspoons Oil Company No. 1 Adams	gas	....
Webb County—		
Crown-Central Petroleum Company No. 18, blk 44	400	1730
Gibson Oil Corporation No. 16 Bruni, blk 18	oil	1732
No. 17 Bruni, blk 18	oil	1726
Killam & Winch No. 2 de la Garza	gas	3000
Suladie Drilling Company, block "C" sur 2084	gas	1563

Kansas

Company, Well and Location	Initial Production Bbls.	Depth
Butler County—		
Liberty Oil & Gas Co., Sluse 1, C S L NE NE SE 26-26-5	30	2750
Empire Gas & Fuel Co., Starkey 12, NWc NE SE 35-27-4	110	2560
Hoyt et al, Clark 6, C W L W½ SE NW 20-27-6e	15	2724
Golden et al, No. 1, NWc SW 20-26-7	*	2802
Cowley County—		
Gypsy Oil Co., Bishop 1, SEc 13-32-4e	80	3022
J. A. Hull, School land 2, SEc NW 15-32-4e	100	3294
Wallace 1, NEc SW 15-32-4e	250	3287
Lewis Oil Co., Robbins 10, SW SE SW SW 31-30-6e	50	2891
Twin State Oil Co., Goodrich 1, SEc SW SE 21-31-4e	175	2381
Roth and Faurot, Sinclay 1, NWc SE 20-31-5e	*	2993
Elk County—		
Landon et al, Walker 1, NWc 34-31-10e	35	2318
Nicholson 1, C NW SE 30-30-10e	*	1495
Greenwood County—		
Manhattan Oil Corp., Sheppard 2, NEc SW SE 2-22-10e	150	2120
Syndicate Oil Corp., Bradfield 3, SEc NE SE 2-22-10e	125	2075
Bradfield 4, SWc SE SE 2-22-10e	125	2121
Davis, Hazlett et al, DeMalorie 23, NWc SE SE 12-22-10e	100	2140
Skelly Oil Co., Wick 16, NWc SW NW 27-22-11e	300	1938
Empire Gas & Fuel Co., Fankhauser 8, SEc 4-22-12e	60	1827
Simmons & Amerada Pet. Corp., Tiffany 6, C W L SE SW SW 9-23-11e	60	2002
Haverhill Pet. Corp., Inthrum 13, NEc SE NE NE 9-23-13e	40	1610
Kanson Oil Co., Freeman 3, NEc SW 6-24-11e	50	1857
Manhattan Oil Corp., Caffnay 1, NEc 18-24-11e	100	1878
Polhamus & Smith, Smith 1, SWc 8-24-11e	*	1910
Smith 2, NEc SW SW 8-24-11e	*	....
Lyon County—		
Theta Oil Co., Jones 5, NWc SE NW 30-21-10e	85	2292
Morris County—		
Nicoll et al, Garay 1, NEc NW 5-17-7e	¶½	680
Maguel 1, SWc SE 6-17-7e	¶1/10	400
Sumner County—		
Roxana Pet. Corp., Owens 1, SEc NW 17-32-2e	134	3684
Twin State Oil Co., Hartzell 1, NWc SE 17-32-2e	700	3715
Marland Oil Co., Wright 1, NEc 9-33-2e	*	3528
Chase County—		
Manhattan Oil Corp., and Phillips, Richards 1, SWc 1-21-9e	*	2490
Commanche County—		
I. M. Bupard et al, Starlock 1, NEc 23-21-18w	*	....
McPherson County—		
Fowler et al, Anderson 1, NWc 3-18-2w	*	3300
Mess County—		
Bell & Sarton, Ryasee 1, C NE	*	....
Reno County—		
Marland Oil Co., O'Neill 1, C SW 7-23-6w	*	....
Rush County—		
Morgan & Downing, Moore 1, SEc SW 10-18-16w	*	....
Sedgwick County—		
Carr, Hartman and Skaer, Howell 1, NWc SW 17-29-1e	*	3814

Oklahoma

Company, Well and Location	Initial Production Bbls.	Depth
Carter County—		
Magnolia Pet. Co., Bumpass 5, SWc NE SE 33-1s-3w	50	3015
Humble Oil & Ref. Co., Lusk 6, NEc SE NE 33-1s-3w	20	3228
Gypsy Oil Co., McClish 2, SWc NW SW 34-1s-3w	175	2556
Lilee 1, SWc NW NE 3-2s-3w	115	2709
Magnolia Pet. Co., Lohman 12-A, SWc SE NE 23-2s-3w	445	2280
Humble Oil & Ref. Co., Riley 1, NWc SW 17-2s-2w	*	3393
Creek County—		
Burlengane & Sharp, Peters 7, SEc SW NW 13-19-8e	75	2883
Peters 12, SEc SW NW 13-19-8e	40	1655
Sand Springs Home, Atkins 26, C S L NW NE 5-18-7e	100	2620
Mid-Continent Pet. Corp., Stewart 24, NEc SE SW 14-17-7e	660	2036
Savoy Oil Co., Johnson 6, SWc NE SE 22-17-8e	5	2409
Inter-Ocean Oil Co., Scott 5, NWc NE SW 23-16-8e	100	3079
Astec Oil Co., White 4, NEc NW NE 11-14-8e	10	2515
Holmes et al, Eufaula 1, NWc 5-18-11e	75	1806
Sunray Oil Corp., Sango 9, SEc NW 6-18-12e	100	2026
Roxana Pet. Corp., Bruce 3, SEc NW NE 10-17-9e	100	2067
Mid-Continent Pet. Co., Dawson 4, SEc SW NW SW 24-17-10e	15	1869
J. H. Wright, Tahkaney 12, SWc NE NW 24-17-10e	65	1848
Cumberland & Kirschner, Mayer 1, SWc 18-17-11e	40	1883
C. G. Tibbens, Lucas 3, C N L SW NE 31-15-9e	7	2367
Hall and Donnelly, Knight 2, NEc SE SW 20-14-10e	60	2824
T. B. Slick, Doyle 1, NW SW SE 32-14-10e	140	3391
Barnsdall Oil Corp., Alec 1, SWc NE SE 27-17-8e	*	3626
H. Sparks et al, Fields 1, NWc NE SE 8-18-10e	*	3225
Twin State Oil Co., Sam Jack 8 SWc SE 9-18-11e	*	2524
Curtis Oil Co., Grayson 2, NEc SE 5-18-12e	*	2295
Hiram Oil & Gas Co., Bucktrot 1, SWc NE 35-17-10e	*	2940
Atlantic Oil Prod. Co., McNevins 4, SEc SW SE 17-14-10e	*	....
Garfield County—		
Cowan et al, Seaman 4, NE NW NE NW 1-22-4w	35	1441
Sinclair Oil Co., Walker 58, SE NE NE 13-22-4w	243	4217
Hartley 4, C S L NW 18-22-3w	10	2808
Hartley 26, SWc NW NW 18-22-3w	5	2735
Kisner 18, SWc NE SW NE 19-22-3w	16	1235
Bu-Vi-Bar Pet. Co., Johnson 1, NWc SW 31-25-4	*	4501
Ostot et al, Nelson 1, NEc NW 36-23-5w	*	....
Grady County—		
Briscoe and Hall, Nation 2, NE NW SE 34-3n-5w	20	1437
Nation 3, NWc SE	35	1434
Hughes County—		
Foster Oil Co., Tiger 3, NEc NW NE 4-9n-9e	30	3800
McCulloch Oil Co., Long 1, C NW NW 22-8-9e	*	4507
Humble Oil Co., Garner 2, NEc SE NE 5-7-8e	*	4197
Independent Oil & Gas Co., Sinclair Foster 1, NWc SE 5-7-8e	*	4272
Walton, Snyder and Marshall, Kite 1, C E L NE NW 8-6n-10e	*	3701
Kay County—		
Comar Oil Co., Harvell 9, NEc 21-29-1w	147	2135
Wentz Oil Corp., School land 2, NWc SW 16-29-1e	43	3410
Marland Oil Co., Cade 1, NEc NW 31-27-1w	*	3921
Lincoln County—		
Magnolia Pet. Co., Owens 4, SEc NE SW 8-15-6e	218	4036
Marshall County—		
United Eight Oil Co., Arbuckle 8, SEc NW SE 24-5s-5e	15	583
Arbuckle 9, NWc SE SE SE 34-5-5e	15	565
Arbuckle 10, NWc SE SE 34-5s-5e	15	581
Noble County—		
K-D Oil Co., White 3, NE NW SE 1-22-2w	¶¼	712
Stephenson 1, SEc NW 1-22-2w	*	720
Okmulgee County—		
Campbell & Phillips Pet. Co., Smith 1, SEc NW NE 4-14-12e	¶11	2750
J. A. Swindler and Sons, Lewis 9, C SE NE 25-13-11e	50	2462
Elm Oil Co., Rontie 8, C W L SW SE 13-14-14e	150	1076
W. M. Hewitt, Sutton 9, NWc SE NW 33-14-14e	75	1230
Devonian Oil Co., Peloche 3, SEc NE SE 23-15-12e	*	2910
W. E. Hammon et al, Claunch 3, C N L S½ NW 35-15-12e	*	2785
J. H. Rebold, McIntosh 6, SEc NE SE 5-14-11e	*	2560
Haley & Halihan, Harrison 1, SWc SE 10-13-12e	*	2940
Morton and Co., Wilson 7, NEc SW NE 7-12-12e	*	3600
Osage County—		
Phillips Pet. Co., No. 9, SW NW SW 1-27-5e	300	3004
No. 12, SEc NE SW 1-27-5e	20	3056
No. 11, SWc NE SE 7-27-6e	2050	2995
Peters Pet. Co., No. 5, SEc SW NW 17-27-6e	300	2993
No. 1, NEc SW 17-27-6e	1680	2916
Osage Gas Prod. Co., No. 371, SWc SE SW 8-27-11e	¶½	1943
Phillips Pet. Co., No. 11, SW NE SE 20-26-6e	100	3004
A. G. Oliphant No. 4, SWc SE 19-25-8e	25	2519
Tidal Osage Oil Co., No. 2, SE NE SE SE 1-23-8e	875	2378
No. 3, SW SE SE 1-23-8e	462	2441

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Company, Well and Location	Initial Production Bbls.	Depth
W. S. Mitchell No. 5, SWc SE NW NW 7-21-9e	55	529
Sand Springs Home No. 97, SW SE NE 24-21-9e	¶50	2168
Continental Oil Co., No. 16, C S L N½ NW 28-20-12e	35	2058
Wnona Oil Co., No. 8, C E L W½ E½ NE 29-20-12e	764	2000
C. L. Lake et al, No. 1, SE NE SW 6-24-8e	*	2893
Indian Terr. Ill. Oil Co., 239, C W L E½ W½ SW 25-24-9e	*	2514
Devonian Oil Co., and Elliott, No. 10, NE SW NW 20-20-12e	*	2239
Tidal Osage Oil Co., No. 1, SEc SW 34-23-9e	*	1036
Pawnee County—		
Magnolia Pet. Co., Vogler 3, NWc SE NE 32-20-6e	441	3345
Mid-Continent Pet. Co., School land 22, SWc NE NW 16-20-7e	35	2598
Smith & Steinberger, Reigle 1-A, NWc NE NE 27-20-7e	5	2567
Ryan Con. Oil Co., Allender 4, SWc NE NE 34-20-7e	*	3353
Payne County—		
Reiter-Foster, Kinneman 1, SWc 4-19-1w	45	4787
M. T. C. Oil Co., Waltman 5, SEc NE NW 26-18-3e	20	4246
Mid-Continent Pet. Corp., Hall 1, NWc SW 3-19-3e	*	4532
Seminole County—		
Ind. Terr. Ill. Oil Co., James 2, NEc NW SE 24-9-6e	20	4035
Reed 2, NWc SW NE 24-9-6e	1097	4182
Mid-Continent Pet. Corp., Tayoche 4, SEc SW 24-9-6e	600	3951
Independent O. & G. Co. and Garland, Fixico 2, SEc SW NE 26-9-6e	5612	4105
Fixico 3, NEc SW NE 26-9-6e	2800	4082
Carter Oil Co., Strethers 1, NEc SE 34-9-6e	¶5	3005
Superior Oil Co., Pullatka 1, SEc NE 31-8-6e	30	4373
Champlin and Bass Sewell 1, NE SE SW 15-8-8e	¶75	3187
W. R. Ramsey, Amos 6, NW SE SE 31-8-8e	2900	4181
Dixie Oil Co., Knight 4, SE NW NE 6-7-8e	10	4145
Magnolia Pet. Co., Hawkins 2, SEc SW NE 6-7-8e	10	4050
Amerada Pet. Co., Roscoe 1, NEc SW 15-8-6e	*	....
Independent O. & G. Co. and Atlantic Co., Simon 4, SWc NW NW SW 5-7n-8e	*	4261
Stephens County—		
Pearce & Brown, Williams 1, SWc NW SW 26-1s-8w	¶6	1461
Tulsa County—		
Superior Oil Co., McKee 2, SWc SE SW 6-19-10e	145	2035
Holmes et al, Bemmere 1-A, NWc NE NE 18-19-10e	20	2092
Savoy Oil Co., Roland 1, NEc SW 7-16-14e	¶6	1412
Sand Springs Home Steele 1, SEc NE SW 23-19-11e	*	2421
W. O. Dickinson, McIntosh 1, NWc SE 12-17-14e	*	1970
Comanche County—		
Harrfy Heabury, Pipe 1, C SW SW 19-3n-9w	*	....
Muskogee County—		
T. O. Petroleum Co., Sango 7, C SE 1-14-17e	*	1130
Lenox Oil Co., Henderson 1, NEc NE 3-11-9e	*	3944
Morgan Flynn and Roxana Pet. Co., Lockhart -, NWc 19-10-11e	*	2710
Peerless Oil & Ref. Co., Wilson 1, SWc NE 13-13-8e	*	4101
Pottawatomie County—		
Croxton Wrightsman et al, Hibbard 1, NWc NE SE 20-6n-4e	*	3800

Arkansas

Stephens Field, Ouachita County—		
Magnolia Pet. Co.'s Watson 6, 31-15-19	5	2198
Smackover Field, Ouachita County—		
Gulf Ref. Co.'s Umstead A-23, 33-15-15	150	2370
Meek Trust's Clausen 3, 35-15-17	35	2300
Dyer Bros.' Stout Lbr. Co. 5, 31-15-16	25	2255
Smackover Field, Union County—		
Gulf Ref. Co.'s Hardy Murphy 43, 4-16-15	130	2365
Natural Gas & Fuel Corp.'s Lawton E-7, 10-16-15	75	2475
Pure Oil Co.'s Bilyieu 7, 8-16-15	65	2300
Southern Crude Oil Purch. Co.'s Wells A-5, 15-16-15	350	2395
McClanahan 11, 6-16-15	¶4	2580
The Texas Co.'s Saxon 4, 4-16-15	50	2255
Total, 9 wells	¶4-880	
Lisbon Field, Union County—		
Humble O. & R. Co.'s Goodwin 3, 20-17-16	25	2160
Lion O. & R. Co.'s Mitchell A-17, 17-17-16	¶1	2120
Magnolia Pet. Co.'s Hulsey 6, 20-17-16	25	2170
Slaughter 3, 17-17-16	¶3	2140
Southern Crude Oil Purch. Co.'s Sydnor 4, 21-17-16	30	2140
Total, 5 wells	¶4-80	

California

Huntington Beach—		
Lytle's H-B No. 1	1800	3960
McKeon Oil Co.'s No. 1	1800	3986
Superior Oil Co.'s Fee 1	428	3860
Chudnow 1	1326	3963
Gillette 7	1328	3929
Schwartz 1	1250	3980
Athens-Rosecrans—		
Union Oil Co.'s Howard Park 31	1000	4007
Dominguez—		
Shell Co.'s Reyes 32	380	4220
Brea-Richfield—		
Brea Canyon Oil Co.'s No. 39	1550	3112
Union Oil Co.'s Stearns 57	450	3795
Ventura Avenue—		
Shell Co.'s Edison 9	2550	6231
Kern County—Wheeler Ridge—		
Standard Oil Co.'s No. 26	212	2760
Midway District—		
Gore Oil Co.'s A-4	60	995
Honolulu Consolidated Oil Co.'s No. 85	60	3030
No. 49	290	3260
Standard Oil Co.'s No. 5	35	3310
Kern Front—		
Geo. F. Getty's Tegeler 3	140	2406
Poso Creek—		
Carrissa Oil Co.'s Winston	*	2817
General Pet. Corp.'s Davies 1	*	2825
Shell Co.'s Vedder 2	40	1876

Mountain States

WYOMING

Salt Creek—		
Midwest Oil Co.'s No. 11A, SW¼, 19-40-78	100	2344
No. 31A, SW¼ 35-40-79	100	1562
Wyoming Associated Oil Co.'s No. 6A, SE¼ 35-40-79	140	1527
No. 21A, NW¼ 36-40-79	120	1477
No. 1A, SE¼ 34-40-79	100	1456
Rock Creek—		
Ohio Oil Co., No. 11, 2-19-78	110	3525
West Salt Creek—		
Hjorth Oil Co. No. 4, SE¼ 32-40-79	*	2800

NEW MEXICO

Eddy County—		
Pueblo Oil Co., No. 1, 33-17-28	150	2185
Table Mesa—		
Continental Oil Co. No. 10, SE¼ 32-40-79	*	2185

MONTANA

Kevin-Sunburst—		
Hill Oil Co., No. 9, SW¼ 22-35-2w	100	1439
Bowbells Oil Co., No. 1, NW¼ 33-35-1w	75	1460
Thirty-One Oil Co., No. 4, SW¼ 31-35-1	100	1450
Carter Oil Co., No. 2, NW¼ 10-35-2	45	1555
Ohio Oil Co., No. 2, SW¼ 18-34-1	75	1400
California Co., No. 3, SW¼ 23-35-2	60	1450
Rice Oil Co., No. 17, SW¼ 30-35-1	70	1450
Tecumseh Oil Co., No. 3, SW¼ 22-35-1	50	1450

WYOMING

Salt Creek—		
Midwest Oil-Wyoming Associated No. 4A, SW¼ 36-40-79	75	1645
No. 29A, NE¼ 36-40-79	80	1740
No. 19A, SE¼ 36-40-79	100	1740
No. 11A, SE¼36-40-79	90	1845
Midwest Oil Co. No. 30AS, SE¼ 27-40-79	80	2210
No. 15, SE¼ 14-40-78	40	1365
No. 3A, NW¼ 23-40-79	100	1530
No. 6L, SW¼ 35-40-79	80	1577
Wyoming Oil Fields Co. No. 21A NW¼ 25-40-79	95	1530
No. 34A, NW¼ 23-40-79	75	1545
No. 19L, NW¼ 25-40-79	100	2470
No. 4A, SW¼ 23-40-79	100	1550
Wyoming Associated Oil Co. No. 76A NE ¼ 2-39-79	90	1850
No. 9A, NW¼ 31-40-79	80	2014
No. 24, NW¼ 35-40-79	300	1045
No. 26A, SW¼ 30-40-78	100	2070
Lance Creek—		
Ohio Oil Co.'s No. 3, 4-35-65	100	3535
Brenning Basin—		
O'Bannon and Barker No. 1, 8-32-73	*	450
Poison Spider—		
Fargo-Western Oil Co. No. 28, 3-33-83	175	2440

MONTANA

Mackay—		
Ohio Oil Co. No. 1, 13-9-17	*	3665
Kevin-Sunburst—		
Ohio Oil Co. No. 4, 34-35-2	25	1465
No. 13, 30-35-1	25	1535
Rice Oil Co. No. 16, NE¼ 13-34-2	*	1417
Ferdig Oil Co. No. 6, SE¼ 29-35-1	35	1500
"31" Petroleum Co. No. 4, SE¼ 31-35-1	25	1490
Ferdig Oil Co. No. 11, NW¼1-34-2	*	1450
Tecumseh Oil Co. No. 3, SW¼ 32-35-1	*	1500
Gordon Interests No. 1, SW¼ 23-34-2	*	1425
Kalispell Kevin Oil Co. No. 5, SE¼ 19-35-1	10	1510
"56" Petroleum Co. No. 19, NE¼ 32-35-1	50	1490

Louisiana

Bellevue Field—		
Autrey Oil Co.'s Elston B-15, 10-19-11	2	461
Caddo Parish—		
Gulf Ref. Co.'s Ferry Lake 256, 15-20-16	¶5	2225
Ferry Lake 257, 29-20-16	10	2300
Magnolia Pet. Co.'s Wemple 1, 14-20-16	630	2209
Radio Oil Co.'s Leonard 3, 31-21-15	30	1506
The Texas Co.'s Curtis 1, 4-20-15	3600	2200
Total, 5 wells	4270	
Monroe Gas Field—		
United Carbon Co.'s Clarke 1, 26-20-5e	¶19	2279
Urania Field, La Salle Parish—		
H. L. Hunt's Urania 2, 2-9-1e	100	1511
Louisiana Oil Ref. Corp.'s Tremont C-7, 2-9-1e	50	1502
Natural Gas & Fuel Corp.'s Tullos 5, 26-10-1e	25	1498
Urania M-7, 20-10-2e	750	1574
O. F. Whittaker's King 6, 36-10-1e	80	1520
Urania Field, Grant Parish—		
Gulf Ref. Co.'s Swope 2, 17-9-1e	25	1610
Total, 6 wells	1030	

Eastern States

PENNSYLVANIA

Bradford Field—		
South Penn Oil Co., Fee 1	2	....
Bingham 156, tract 1	2	....
Taylor 37	2	....
Rumsey 129	2	....

Company, Well and Location	Initial Production Bbls.	Depth
Hallock & Weston 95	2	....
Hallock & Weston 96	2	....
Jones 214	2	....
Jones 215	2	....
Bingham 1	3	....
Whipple 1	3	....
Culberston 55	3	....
Smith 123	2	....
Smith 125	2	....
Middaugh 49	2	....
Hodge 1	2	....
Kinzua 188	3	....
Cotton 55	3	....
Hazlewood Oil Co., Hazlewood 49	3	....
Tract 25, plat 14	2	....
Tract 1, plat 21	*	....
Maxwell Bros., Franchot 18	3	....
Thomas T. Fox, Franchot 14	3	....
D. W. Daly, Bingham 389, tract 44	3	....
Hope Oil Co., S.ll 11	3	....
H. B. Oil Co., Bingham 1	3	....
Linwood Oil Co., Gerner 1	3	....
Coit Estate, Brennan 1	3	....
Storms & Coast, Hanes 2	3	....
T. B. Martin, Borden 1	3	....
B. Kirley & Co., Mullin 1	3	....
M. Hungiville, Hungiville 25	3	....
T. H. Kennedy, Kennedy 2	3	....
Bovaird & Hamlin, Rew 31	3	....
Korner Bros., Gormley 1	3	....
M. D. Wright & Co., Wright 1	4	....
Dunlavy Bros. & Curtis, Curtis & Co. 1	4	....
L. S. Letson, Hoffman 1	4	....
C. E. Potter, Irvine 1	3	....
Joseph Munnch Estate, Morse 1	3	....
Wilson & Co., Murphy 1	3	....
Piper & Lloyd, Ekas 14	3	....
T. H. Kennedy, Bingham 484, tract 143	3	....
Hooker & Co., Hooker 7	3	....
Petroleum Reclamation Co., Looker 1	2	....
Greene County—		
Manufacturers Light & Heat Co., Frank Waters 1	¶½	....
Jesse Morris 1	*	....
Carnegie Natural Gas Co., Mel. Mitchell 1	¶2	....
James Null 1	¶2	....
R. R. Baldwin 1	'2	....
Phillips Oil & Gas Co., D. K. Phillips 1	¶2½	....
Filby & Co., Mary Ann Goodwin 1	¶2	....
Mercer County—		
New Wilmington Gas Co., Sherman Drake 1	¶1½	....
Crawford County—		
Nutting Oil Co., Prather 24	7	....
Butler County—		
M. B. Finnessy, McCullough 5	3	....
Theodore Scott, Daubenspeck 3	3	....
Battenfelder & Co., Lentz 1	3	....
Gregory & Crawford, Anderson 4	2	....
J. E. Dufford & Co., Kriess Heirs 1	*	....
Venango County—		
Hutchison & Eakins, Plummer 45	2	....
Smiley, Cross & Co., Kimes 28	2	....
Arthurs & Dodds, Sutley 25	2	....
Kapp Bros., Kapp 2	¶1¼	....
Walters, Smith & Co., Porter 86	2	....
Williams & Co., McCalmont 11	2	....
Oil City Trust Co., Frampton 11	2	....
Porter Irwin & Co., Irwin 1	2	....
Center-Middle Field—		
J. L. Billstone, Phillips 1	¶1	....
E. J. Moser & Co., Lot 3767, tract 32	2	....
Johnson Bros., Johnson 1	2	....
R. L. Thomas, Dennis 12	2	....
S. Q. Wilson, Wilson 41	*	....

NEW YORK

Allegany County—		
James G. Paul & Co., F. D. & B. 1	3	....
W. J. Weller & Co., Kinley 1	3	....
Hazlewood Oil Co., Hazlewood 2	3	....
Citizens National Bank of Wellsville Fee 62	3	....
First National Bank of Shinglehouse Murphy 1	3	....
McKean Natural Gas Co., McKean 1	2	....
W. E. McMurdy, McMurdy 1	2	....
F. L. Williams, Williams 1	2	....
Derby & Black, F. D. & B. 1	2	....
W. H. Lobaugh Trustee, Perkins 1	2	....
Isaac Willetts Estate, Willetts 1	2	....
A. D. Reeland & Co., South Penn 1	2	....
Keller & Keller, Keller 1	2	....
Anderws Oil Co., Andrews 1	2	....
L. W. Shaner & Co., Shaner 1	2	....
G. & P. Birteil, Birteil 1	2	....
H. Carls & Sons, Carls 1	2	....
Carls 2	2	....
South Penn Oil Co., Chipmonk 1	2	....
N. V. V. Franchot Trustee, Brandel 1	3	....
Franchot 1	2	....
M. J. Ball & Co., McGuire 1	2	....

WEST VIRGINIA

Ritchie County—		
Fisher Oil Co., Leonard Ingram 1	2	....
T. A. & A. P. Mellon, C. R. Kearns 1	¶¼	....
Carnegie Nat. Gas Co., W. S. Chapman 5	¶1½	....
A. L. Britton 4	5	....
J. L. Ballap 2	*	....
Elder & Co., J. W. Sharp 1	*	....
Mellon Oil Co., Kearns 1	¶1½	....
Doddridge County—		
Hope Construction & Ref. Co., T. G. Swiger 6	¶1	....
J. H. Cunningham 5	15	....
Kinzer & Nay, F. P. Dolsan 1	3	....
Henry Ahouse 1	*	....
Murphy Oil Co., O. Coleman 1	¶1	....
Clifton Oil & Gas Co., Joseph Freeman 23	3	....
Roane County—		
Heck Oil Co., J. W. Conley 4	20	....
D. H. Borroughs 1	5	....
United Fuel Gas Co., Littlepage-Jackson 1	¶2	....
Chartiers Oil Co., Norma Haynes 1	¶1	....
Gilmer County—		
McCall Drilling Co., Darby Bush 1	7	....
Pittsburg & W. Va. Gas Co., D. Stalnaker 2	*	....
The Ohio Oil Co., J. E. Smith 3	20	....
Pleasants County—		
Forest Oil Co., S. B. Wrick 1	2	....
Ambler Oil Co., Col. Templeton 1	20	....
L. P. Bickel & Son, A. V. Hammell 3	2	....
Wetzel County—		
Manufacturers Light & Heat Co., Sarah Ashcraft 1	5	....
Carnegie Natural Gas Co., M. T. Anderson 1	5	....
Mingo County—		
Red Jacket Coal Co., Fee 1	¶4	....
Old Colony Coal Co., Logan Cannel Coal Co. 19	5	....
Harrison County—		
Clifton Oil & Gas Co., J. J. Williams 4	¶2	....
Hope Cons. & Ref. Co., G. W. Morrison 2	¶¼	....
Kanawha County—		
United Fuel Gas Co., K. Y. Shamblin 1	¶1½	....
Lewis Woods 1	¶1¾	....
Clay County—		
Virginian Gasoline & Oil Co., Brown-Sans 2	10	....
Calhoun County—		
Dollman & Kingsbury, L. S. Force 1	¶3	....
Marion County—		
Carnegie Nat. Gas Co., F. M. Mason 1	¶2½	....
Tyler County—		
Cameron Oil & Gas Co., Virden 1	*	....
Marshall County—		
W. E. Bargess & Co., William Morrison 1	*	....

KENTUCKY

Warren County—		
Wood Oil Co., Davenport 1	150	460
William Zimmer, Covington 10	3	....
Unknown Parties, J. Deathridge 3	3	....
Allen County—		
DeCaigney & Co., Thratton 7	3	....
Harley & Co., Oliver 5	3	....
Barren County—		
Star Oil & Gas Co., Richardson 14	10	....
Richardson 15	10	....
Richardson 16	10	....
Consolidated Gas Co., H. W. Duff 47	20	....
H. W. Duff 48	20	....
A. W. Ziegler Attorney, Darter Bros. 4	15	....
R. B. Tyler, White 13	15	....
Fred C. Moore, Howard 13	8	....
Esslinger Oil Co., C. B. Jones 15	18	....
Owensboro Field—		
The Ohio Oil Co., Alonzo Crowe 1	15	....
Daly 1	*	....
Leeper Oil Co., Barker 1	10	....
J. A. Greer 2	*	....
Courson & Ellis, A. Martin 1	*	....
Petroleum Extraction Co., Kirk-Woodward 1	*	....
Butte Dredging Co., Allie Evans 5	3	....
Daviess County Oil Co., Manuel Thompson 1	*	....
Lawrence-Johnson Counties—		
Swiss Oil Corp., J. M. Fyffe 24	8	....
P. P. Holbrook 47	6	....
James Skaggs 21	6	....
Johnson-Magoffin Counties—		
Louisville Gas & Electric Co., Whittaker 1	¶3½	....

SOUTHEASTERN OHIO

Morgan County—		
Polston & Maynard, J. J. McCarty 15	20	....
The Pure Oil Co., E. R. Fye 1	7	....
Bowman Oil & Gas Co., Asa McGraw 1	¶1¼	....
Monroe County—		
J. C. Carney & Co., J. T. Scott 5	2	....
Gatton & Stewart, James Kinsey 6	*	....
Noble County—		
Joseph Saling & Co., Caroline Britton 2	2	....

CENTRAL OHIO

Hocking County—		
The Pure Oil Co., Laura A. Leslie 2	105	....
Griffith Producing Co., Marlow 5	45	....
Ozark Oil & Gas Co., Ida M. Hall 1	1	....
Arkflansas Fuel Oil Co., Mary S. Arnold 12	¶2	....
Graham & Co., M. & J. Hite 8	*	....
Holmes County—		
East Ohio Gas Co., Benice Allison 1	130	....
The Pure Oil Co., Isaac Snyder 2	50	....
Licking County—		
Ohio Fuel Supply Co., O. Hansberger 7	20	....
Ellen E. Forry 13	2	....
Athens County—		
Arkansas Fuel Oil Co., M. G. Wood 1	3	....
Cook & Co., E. R. Walker 2	2	....
Ashland County—		
Ohio Fuel Gas Co., Thomas Miller 1	8	....
Ashtabula County—		
Dave Culbertson & Co., Mrs. Ed. Spilstone 1	¶2	....
Perry County—		
Keller Bros. & Co., Robers Bros. 25	*	....

NORTHWESTERN OHIO

Sandusky County—		
Stitt, Pool & Co., Stitt-Pool 55	6	1330

INDIANA

Gibson County—		
Bell Bros., Sam McCullough 1	¶2½	1046
Sullivan County—		
R. A. Hooten & Co., J. T. Carrithers 5	1	857

ILLINOIS

Wabash County—		
Young, Wirebaugh & Co., Kate Keyser 6	150	1354
Adams Corner Oil Co., M. Madden 9	35	1368
Hennensberger & Co., Bob Liddle 1	5	1775
Alspauh & Co., Abner Litherland 1	*	1793
Ellison & Co., Collison Heirs 5	*	1520
Joe S. Young Jr. & Co., W. O. Johnson 1	*	1523
A. Gher 1	*	1476
Lawrence County—		
The Ohio Oil Co., Ellen Lutz 7	50	1377
William Dennison 2	*	1004

MICHIGAN

Saginaw County—		
Saginaw Prospecting Co., Periard-Bixley 1	35	1828
The Sun Co., William Scherzer 1	30	1838
W. G. Berghern & Co., John Winters 1	20	1844
Fordney Petroleum Co., John Bizner 1	10	1817
St. Clair County—		
Local Capital, near Port Huron 1	3	681

Filing Department Has Important Function In Preserving Drilling Records

By T. L. FONTAINE
Rio Bravo Oil Company

RECORDS of the Oil Industry are something more than merely carrying to conclusion a routine filing system. In the production of oil, complete and readily available files often assist in arriving at operating profit. In other words, the filing system of a producing company should be organized with the idea of making the information in it serve as a background for directing current and future operating policies.

The rapidity of changes in operating methods and the necessity of quick development in new fields under all conditions makes it absolutely necessary that such information be complete and accessible at any time.

The subject of drilling wells would probably be considered by the majority of the producing companies the most importnat. In drilling wells readily available records often save considerable time and expense due to previous knowledge of formations and local conditions.

The system used by the Rio Bravo Oil Company for compiling and keeping its information on drilling wells is shown in the accompanying form. The company's drillers keep notes on all changes in formation together with a record of casing used and the performance of bits. This report, which is later typed and sent to the company's headquarters, contains all the information that could be desired on a drilling well, starting with the well number, location and date.

In the formation record the company has data on all formations drilled, size of the hole, and information as to whether or not cuttings have been obtained.

The next on the report is the coring record. This shows the depth from which core is taken and directly opposite the kind and size of core barrel, length, whether or not the core shows oil or gas and the last column records the formation.

Another interesting part of this drillers' report is the bit record for rock and fish tail bits. From this record information is obtained on how much time is taken to go in the hole, how much hole is made with the bit before it is taken out, and elapsed time coming out of the hole. Also on rock bits the number of cones and reamers used per foot can be determined.

The casing record contains every detail, such as, length, size, weight, couplings, thread, seat, and number of joints of casing used in the well.

In the space allotted to the labor record is shown the name of the driller and all of the men on the crew and what position they hold. Also the number of hours each man was employed during the 24-hour period. Below this a special column entitled: "Remarks," is shown which is used to record any unusual happenings at the well which cannot be shown in any of the above described headings.

Graphic Log Made

From this Driller's Log, the clerk in any particular field, or tool-pusher makes the typewritten report, which is sent to the various officials in the general office. After the forms have

RIO BRAVO OIL COMPANY
DRILLING REPORT
FOR 24 HOUR PERIOD ENDING 12 O'CLOCK MIDNIGHT

Well No. 33-4 Field Pierce Junction 6 AM Date 10/6/26

FORMATION RECORD

FROM	TO	SIZE OF HOLE	FORMATION	COLOR	HARDNESS	CUTTINGS	DRILLER
3540	3560	6¼"	Gumbo & Lime	Pink	Hard		McDaniel
3560	3572	"	Gumbo	Blue	Tough		Hooks
3572	3580	"	Shale	"	Soft		"

CORING RECORD—OIL AND GAS SHOW

FROM	TO	CORE BARREL	LENGTH	OIL OR GAS	FORMATION
3574	3580	Elliot Core Barrel	6	None	Green Shale

BIT RECORD—ROCK AND FISH TAIL BIT

BIT NUMBER	GOING IN HOLE: START TIME	GOING IN HOLE: DEPTH	ROTATING: START TIME	ROTATING: FOOTAGE	COMING OUT OF HOLE: DEPTH	COMING OUT OF HOLE: END TIME	CONES	REAMERS	CONDITION
34	6pm	3520	8am	7:15pm	3574	9pm			
Elliot	9:30pm	3574	11:30pm	1pm	3580	2:30pm			

CASING RECORD

LENGTH	SIZE	WEIGHT	COUPLINGS	THREAD	NO. JOINTS	SEAT

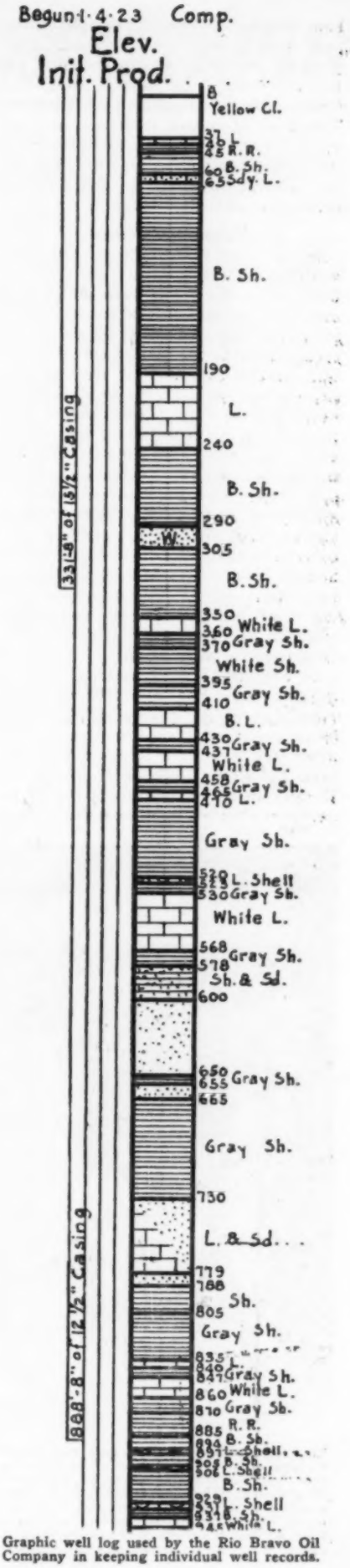
LABOR RECORD—MORNING TOUR / EVENING TOUR

OCCUPATION	NAME	HOURS	OCCUPATION	NAME	HOURS
Driller	W.L.Hooks	12	Driller	L.T.McDaniel	12
D'man	B.T.McBee	12	D'man	V.D.Davidson	12
Helper	W.C.Scott	12	Helper	A.B.Crowell	12
"	Fred Scott	12	"	M.L.Richardson	12
"	H.L.Bolin	12	"	F.P.Healy	12
Fireman	F.E.George	12			

REMARKS: Reamed From 3411 to 3470 Hooks

E.E.Smith, Clerk

Form used by the Rio Bravo Oil Company in making drilling reports. Note formation, core bit and casing record is required.



Graphic well log used by the Rio Bravo Oil Company in keeping individual well records.

been reviewed they go to the draftsman who compiles a "graphic log." This log is drawn on cross-section paper and shows by marks, lines, and figures the formations encountered. This type of record is drawn very accurately and is carefully preserved. After the completion of the "graphic log" the drilling reports are returned to the general filing bureau.

Keeping Cuttings

In rotary drilling cuttings from the mud-box at the well are carefully labeled as to the depth from which they came and mailed to the general office in special bags. Then the cuttings are turned over to the paleontologist, who after careful examination, renders a report to the proper official showing in detail the findings. This report contains the depth from which the cutting came, also the color, fossils, age, and description of the formation. After this report has been perused by the officials it goes to the general filing bureau. All cores taken with a core barrel are also handled in this manner. Should a core be taken of an oil sand the report of the paleontologist contains an analysis of the oil show, whether or not it is considered light, fair, good, or very good.

In time the drilling reports, copy of graphic log, and all paleontological reports reach the general filing bureau. They are then placed in proper date order and filed in a folder which contains the name of the well on the tab. Usually these reports are clamped together with a patented fastener to keep any of them from being lost. The file on a drilling well is then placed in the filing cabinet and is readily accessible for future reference. Where a producing company has drilling operations in progress in numerous localities, a separator or large tab is placed between the folders one for each of the different fields. Behind these tabs under the name of any particular field you will find the three reports together under the name of the well. Thus the complete record of a drilling well is propery filed and it is as readily accessible in five years as it is the next day.

Cost of Keeping Record

As a general average the cost of keeping this record of a well would be approximately one-tenth of the total expenditure for the drilling of the well. This considers the cost of a well drilled to a depth of 3500 feet at a total ependiture of approximately $30,000. The following table shows roughly the manner used in arriving at the cost of the above records:

Drilling Well—60 Days Elapsed Time

2 Drillers, 6 days	$ 120.00
1 Field Office Clerk, 6 days	30.00
Stationery	10.00
Draftsman, one and one-half days	11.00
Paleontological Department Work on all samples	500.00
Cost of cores	2200.00
Total cost	$2871.00

The above display of the Layne and Bowler Company in the window of one of the prominent banking and trust institutions of Houston is an example of good that can be done by oil equipment manufacturers in helping to familiarize the public with the extent and importance of the oil industry. The Layne and Bowler Company has general headquarters at Houston and are manufacturers of well screen and other field specialties. It has one of the most modern and up to date manufacturing plants in Houston. The Window display used by the company was made up of the various products manufactured in its plant with cards explaining the purpose and use of each item of equipment while other placards advised the public that the company was a local concern of 25 years standing.

Purchasers Visit Gardner Governor Plant

Houston, Texas.—A group of Texas and Louisiana men, including company officials, purchasing agents and supply men returning home after attending the world's series at St. Louis and visiting other Central Western points report an enjoyable visit to Quincy, Illinois, where they were the special guests of the Gardner Governor Company at the plant and home office of the company.

The visitors accompanied H. R. Bourne, manager of the Houston office of the Gardner Governor Company, to Quincy, where they were entertained at the homes of Ralph and J. W. Gardner and later taken through the company's plant. The visitors were interested particularly in the Gardner pumps, which are used extensively throughout the southwest.

Among the visitors were R. F. Lewis, assistant superintendent of production of the Gulf Refining Company, Shreveport; F. R. Oldham, general purchasing agent for the Gulf Production Company, Houston; P. P. Stagg, purchasing agent for the Gulf Refining Company, Shreveport; M. E. Waldron, pipe line superintendent and S. D. Jackson, purchasing agent for the Louisiana Oil and Refining Corporation, Shreveport; George M. Williamson, of Haywood & Williamson, Shreveport; and C. L. Clausel of the Norvell-Wilder Hardware Company, Houston.

Carolina - Texas Field Gets Second Oiler

Laredo, Texas.—The bringing in of a well at 3040-3047 feet in the Carolina-Texas field, 400 feet deeper than the Associate's discovery well in the field, has upset dope on oil and gas fields in this district. The new producer is the Magnolia's No. 2 Webster in the northwest quarter of Survey 684 of Webb County, 750 feet northwest of the Associated-Carson's No. 2 Webster, discovery well on the same survey.

Several months ago, the Associated-Carson Interests drilled a test to 2600 feet, which came in for 900 barrels and then settled to 200 barrels. Leasing became active and a number of wells were drilled, all of them failing to make oil producers at the 2600-foot level. Some of them found gas at below 3000 feet, but they failed to produce.

The Magnolia started its offset, 750 feet from the discovery well, but failed to get oil at the expected depth. It was then drilled to the present depth when 42 gravity oil began to flow into the hole. After casing was set the oil raised to around 1300 feet. At latest reports, the well is flowing by heads and is expected to make a steady flowing well when tubing is set.

The oil producers are in the edge of the gas field and are producing from a shallower formation than the gassers, with the exception of the new test, which is making crude from the same depth as the Carolina-Texas Company's deep gasser.

WILDCATS FROM ALL SECTIONS

Southern California Wildcats

COMPLETION

Company, Well and Location	Initial Production Bbls.	Depth
El Segundo—		
Union Oil Co.'s No. 1	*	5326

DRILLING REPORT

ALAMITOS HEIGHTS—Pan-American Pet. Co.'s Collins 1, lcn.

ATHENS-WEST—Julian Pet. Corp.'s Mosier 1, dr 3000 ft.

BANDINI — Pan-American Pet. Co.'s De-Baker 1, dr 1200 ft.

BELLFLOWER—Marine Oil Corp.'s Strong 1, dr 5340 ft.

BURBANK—Jeffries-Overton's No. 1, sd 980 ft; No. 2, sd 1300 ft.

BIXBY HILLS — National Security Co.'s No. 1, sd 5151 ft. Orange Co. Pet. Co.'s No. 1, sd 2820 ft.

CLEARWATER—Featherstone-Preston's No. 1, sd 4185 ft.

CLAREMONT—Claremont Oil & Gas Co.'s No. 1, co 1100 ft.

DOMINGUEZ — Dominguez Extension Oil Co.'s No. 1, fsh 1700 ft.

EAGLE ROCK—Calwin Oil Co.'s No. 1, dr 6082 ft.

EL SEGUNDO—Union Oil Co.'s Howland 1, abn 5326 ft. Southern California Drilling Co.'s Matteson 1, setting 16-inch 680 ft.

HAWTHORNE—Wirwell Oil Co.'s Dome, rigging 5586 ft.

IRVINE—Calny Oil Co.'s Irvine 1, sd 4247 ft.

LANCASTER — Rudd-Assmussen's No. 1, preparing to install rotary 1860 ft.

LONG BEACH, WEST—Millef-Haley's Extension 1, cemt 4865 ft.

MANHATTAN—Manhattan-Pacific Oil Co.'s No. 1, idle 4409 ft.

MAYWOOD—Magnolia Pet. Synd.'s No. 1, stg. 4442 ft.

NEWHALL-SAUGUS—W. W. Stabler's castaic 1, dr. 2700 ft. Geo. W. Johnson's Wickham 1, bldg. rds. Temple-Lefevre's Castaic 1, idle 2107 ft. Union Oil Co.'s Saugus 1, dr 4500 ft.

PACOIMA—W. O. Brubaker's Fernando 1, sd 2698 ft.

PLAYA DEL REY—Milham Exploration Co.'s No. 2, fsh 6094 ft.

RESEDA—Petroleum Securities Co.'s Sesnon 1, dr 4500 ft.

SPADRA—Spadra Oil Co.'s Northey 1, will re-cemt 528 ft.

SAN FERNANDO—Standard Oil Co.'s Uni-University 1, dr 4425 ft.

SAN JOSE HILLS—Bardeen Oil Co.'s Didier 3, sd 1938 ft. D. & B. Oil Co.'s Amar 1 dr 3182 ft.

SAN JUAN CAPISTRANO—California Pet. Dev. Co.'s San Juan Capistrano, dr 2370 ft.

SUNSET BEACH—General Pet. Corp.'s Lomita 1,hauling rig material.

TELEGRAPH CANYON—Quadra Pet. Co.'s MJM 1, dr 4060 ft.

TOPANGO CANYON—Standard Oil Co.'s Austin 1, co 1681 ft.

VAN NUYS—Van Nuys Community Oil Co.'s No. 1, sd 3855 ft.

RIVERSIDE CO.—Banning Oil Co.'s No 1, sd 974 ft. Corona Oil & Gas Co.'s No. 1, dr 1425 ft. Splindletop Oil Synd.'s No. 1, co 2590 ft. Trabuco Oil Co.'s No. 1, dr. 1708 ft.

SAN BERNARDINO CO.—Arrowhead Dev. Co.'s No. 1, ready to test 1660 ft. Burgess Terrace Oil Co.'s No. 1, dr 1116 ft. H. & P. Oil Co.'s Ranger 1, co 1963 ft. Hesperia Oil & Gas Co.'s 1A, co 3312 ft. Mahala Oil & Gas Co.'s No. 2, prep. to abn. 5080 ft. Wade-Bourne-Aldhal's Shoe 1, dr 590 ft. Western Pacific Oil Co.'s No. 2, dr 1380 ft.

SAN DIEGO CO—Cardiff Oil Corp.'s No. 1, installing cable tools 988 ft. Pacific Coast Pet. Corp.'s No. 1, dr 3126 ft. Torrey Pines Oil Co.'s No. 1 rig.

Northern California Wildcats

KERN COUNNTY

ANTELOPE PLAINS—W. H. Davis' No. 1, dr 1000 ft.

BUTTONWILLOW—Milham Exploration Co.'s No. 1, dr 1386 ft.

COMANCHE—Kern 29 Oil Co.'s No. 1, ptro, 1927 ft.

DEVILS DEN—Devils Den Prod. Co.'s No. 4, sd 1228 ft. No. 5, prep. to re-dr 565 ft. Marathon Oil Co.'s No. 1, dr 4390 ft. Robins Oil Co.'s No. 1 dr. 1990 ft.

FAMOSA—Woodward & Sheedy's No. 1, dr 3070 ft. Union Oil Co.'s No. 1, dr 450 ft.

GOULD HILLS—Mendocino-Midway's No. 1, dr 1950 ft. Myrtle F Oil Co.'s No. 1, putting on pump 900 ft L. E. Westrich's No. 1, dr 610 ft.

SHALE HILLS—Huntington-Hawthorne's No. 1, mat. on grd.

TEMBLOR HILLS—Fortuna Oil Co.'s No. 1, trying to locate H20 2070 ft. Hagar-Denisotn-Jones' No. 1, bldg rig.

WASCO—Main Oil Co.'s No. 1, fsh 5304 ft. No. 2, sd 5276 ft.

EASTERN KERN CO.—Crusaders Oil Co.'s No. 1, dr 2271 ft. No. 1A rig.

McKITTRICK FRONT—Lacy-Esper Pet. Co.'s No. 1, sd 3275 ft. Ridge Oil Co.'s 1, bailing 1800 ft.

SUNSET—Bell-Wrightman's No. 1, dr 5335 ft. Fresno-Sunmaid's No. 1, sd 4200 ft. Gore Oil Co.'s No. 1, temp sd 2100 ft. Shell Co.'s No. 1 fsh 4822 ft.

FRESNO COUNTY

CLOVIS—Fresno-Madera's No. 1, sd 3760 ft. W. W. Taylor's No. 1, dr 1660 fet.

HURON—Associated Oil Co.'s No. 2, dr dr. 1864 ft.

KERMAN—Associated Oil Co.'s No. 2, bldg rig.

RAISIN CITY—Fresno-United Oil Co.'s No. 1, sd 3490 ft.

WARTHAM—Bald Mountain Drilling Co.'s No. 1, sd 850 ft.

KINGS COUNTY

KITTLEMAN HILLS — Bolsa Chica Oil Co.'s No. 1, dr 2360 ft. Marland Oil Co.'s No. 1, fsh 4579 ft. South Coalinga Oil Co.'s No. 1, dr 1450 ft.

VENTURA COUNTY

CAMARILLO—Standard Oil Co.'s Camarillo, dr 3556 ft.

CASITAS-OJAI — Miley Exploration Co.'s Casitas 2, fsh 607 ft. Rio Grande Oil Co.'s Canet 1, dr 2100 ft.

MOORPARK—Shell Co.'s Berlywood 1, dr 6642 ft. E. A. Parkford's Simi-Lloyd 1, dr 320 ft.

PIRU—Henderson Pet. Corp.'s Karr 1, running 10-inch cas 1183 ft. Bishop-Buckeye-Union's No. 2, rigging rotary. Hopper Canyon Oil Co.'s Rehart 1, lcn, water 5000 ft. Oil Exploration Co.'s Janes 1, dr 124 ft.

WHEELER CANYON — Wheeler Canyon Oil Co.'s No. 16, sd 4520 ft.

SESPE - FILLMORE — Gillette-Howard's Grant-Elkins 1, rigging 4160 ft. Sespe Oil Co.'s Smith 2, sd 4003 ft.

VENTURA—Associated Oil Co.'s McGonigle 1, testing shut-off 5312 ft. V. L. & W. Co. sd, cemt 4105 ft. Chanslor-Canfield's Hobson 1, sdtr dr pipe 5855 ft. Milham Exploration Co.'s Sexton 1, fsh 6219 ft.

SANTA BARBARA COUNTY—Channell Oil & Dev. Co.'s No. 1, re-organizing. Hollywood Oil Corp.'s No. 1, changing equipment 900 ft. Miley Exploration Co.'s Goleta 1, dr 250 ft. Summerland Oil Co.'s Becker 1, dr 2435 ft. Standard Oil Co.'s P. U. 1, dr 3489 ft. West Penn Prod. Co.'s Shields 1A, rigging up.

SAN LUIS OBISPO COUNTY — Arroyo Grande Pet. Co.'s No. 1, dr 3920 ft. Barneyberg Oil Corp.'s No. 1, cemt 4500 ft. Mapes Holding Co.'s No. 1, dr 560 ft. Panorama Oil Co.'s No. 1, dr 860 ft. Shandon Oil Co.'s No. 1, dr 3010 ft. Walkin Pet. Co.'s No. 1, dr 2437 ft.

MONTEREY COUNTY — Harriman-Jones Oil Co.'s No. 1, reorganizing. Hennigan-Schwenigan's No. 1, dr 3525 ft. Pan-American Pet. Co.'s No. 1, dr 2646 ft. Pyramid Oil Producers' No. 1, dr 3110 ft.

TULARE COUNTY — Ducor Drilling Co.'s No. 1, co 3600 ft. Federal Exploration Co.'s No. 1, dr 3600 ft. Martin Pet. Co.'s No. 1, dr 1600 ft. Ozena Oil Co.'s No. 1, dr 415 ft. John Walklin's No. 1, building rig. Yolo Oil Co.'s No. 1, rigging.

SONOMA COUNTY—Shell Co.'s Murphy 1, dr 3040 ft.

Rocky Mountain Wildcats

WYOMING

Montana-Wyoming Oil Co.'s No. 1, Park County, NE¼ 20-53-101, dr 2150 ft. West Zimmermand Butte Oil Co.'s No. 1, Zimmermand structure, NE¼ 28-44-93, dr 2525 ft. Associated Oil Co.'s No. 1, NW¼ 20-29-68, Platte County, sd 1297 ft. Marland Oil Co. of Colorado's No. 2, Wilson dome, 32-38-83, dr 2365 ft. Texas Production Co.'s No. 5, Maverick Springs, 26-6-101, dr 1325 ft; No. 1, Big Sand Draw, 15-32-95, fsh 3075 ft; No. 5, Lost Soldier, 3-27-90, ur 1650 ft. Producers & Refiners Corp.'s No. 1, Baxter Basin, 11-19-104, dr 2650 ft; No. 1, Crook's Gap, 13-28-93, co after shot, td 2675 ft; No. 1, St. Mary's, 14-21-28, dr 767 ft; No. 2, Garland, 24-56-98, fsh 2540 ft; No. 1, Parco, 21-21-86, dr 275 ft; No. 5, Garland, 24-56-98, fsh 2540 ft; No. 1, Parco, 21-21-86, dr 275 ft; No. 5, Sand Draw, 10-32-95, co 3310 ft; No. 5, Wertz, 7-26-89, 4½-inch cas, td 5390 ft; No. 1, Murphy dome, dr 3600 ft; No. 2, Clay Basin, 22-3-24, setting 8-43-91, dr 2462 ft; No. 9, Ferris, 11-26-90, dr 660 ft; No. 2, Eight Mile lake, 35-20-88, dr 3916 ft. Ohio Oil Co.'s No. 3, Oregon Basin, 8-51-100, dr 1540 ft; No. 3, Hidden dome, 31-48-90, fsh 2785 ft; No. 2, Byron, 33-56-97, dr 1610 ft. Carter Oil Co.'s No. 2, Billy Creek, 17-48-82, 4185 ft; No. 1, Horse Creek, 35-17-70, dr 2900 ft; No. 1, Nowood, 5-48-90, showing for commercial producer, td 980 ft. Midwest Refining Co.'s No. 2, Notches, sd 2767 ft; No. 1, La Barge, 21-27-113, dr 830 ft; No. 1, Dutton Creek, 118-78, commercial well, td 4905 ft. Prairie Oil & Gas Co.'s No. 1, Gooseberry, 32-47-100, co 3650 ft; No. 2, Buffalo Basin, 17-27-95, co 2535 ft. Union Oil Co. of California's No. 1, Black Mountain, NW¼ 34-43-91, dr 1780 ft; No. 1AB, Black Mountain, NW¼ 28-439-, dr 2368 ft; No. 14, Maverick Springs, SE¼ 15-6-2, dr 440 ft; No. 1C, Fremont County, NE¼ 15-5-1, dr 1916 ft; No. 1SC, Fremont County, SW¼ 10-28-92, dr 3920 ft; No. 1G, Fremont County, SE¼ 27-1-1, dr 475 ft. Utah Oil Refining Co.'s No. 1, Hot Springs County, 5-42-90, dr 918 ft; No. 2S, Hot Springs County, 36-43-91, dr 900 ft; No. 1FC, Black Mountain, 26-43-91, dr 2717; No. 2, Black Mountain, 35-43-91, ur 1140 ft.

COLORADO

Gypsy Oil Co.'s No. 1, Garfield County, 5-8-102, dr 3625 ft. Zenith Petroleum Co.'s No. 1, Pueblo County, 11-19-65, dr 1250 ft. Tidewater-Associated Oil Co.'s No. 1, Rio Blanco County, dr 2760 ft. Marland Oil Co.'s No. 1, Moffat County, 16-3-91, fsh 1930 ft; No. 1, Moffat County, 34-4-92, dr 1734 ft. W. T. Morris Interests' No. 1, Moffat County, 22 12-100, showing of oil, td not reported. Repollo Oil Co.'s No. 1, Boulder County, 33-1-70, ur 4630 ft, td 4730 ft. Timpas Dome Oil Co.'s No. 1, Otero County, 29-26-57, dr 250 ft. Texas Production Co.'s No. 2, Rio Blanco County, 31-2-102, fsh 1315 ft; No. 1, Moffat county, dr 566 ft. Continental Oil Co.'s No. 1, Jackson County, 12-9-79, dr 4330 ft. Fifty-Four

Oil Co.'s No. 1, Fort Collins, 5-7-68, sdtr 3718 ft.

NEW MEXICO

Texas Production Co.'s No. 1, Chaves County, 29-17-18, dr 2125 ft. Azotea Petroleum Co.'s No. 1, San Juan County, 9-30-11, sd 1203 ft. Mescalero Petroleum Co.'s No. 1, Lea County, 27-19-18, dr 665 ft. Cap Rock Oil Co.'s No. 1, Lea County, 11-16-32, dr 670 ft. Inglefield Interests' No. 1, Lea County, 4-17-34, dr 1400 ft. Maljamar Oil & Gas Co.'s No. 1, Lea County, 5-17-32, dr 750 ft. Ross-Bloomfield Royalty Co.'s No. 1, San Juan County, 11-29-11, dr 2616 ft. Congress Oil Co.'s No. 1, San Juan County, 34-29-11, dr 1675 ft. Twenty-Six Oil Co.'s No. 1, San Juan County, 21-29-11, dr 160 ft. Etz-D'Vito Interests' No. 1, Chaves County, 24-11-25, dr 870 ft. Exploration Co.'s No. 1, Lea County, 25-19-35, spd.

UTAH

Desert Petroleum Co.'s No. 1, Gibson dome, 3-30-20, dr 100 ft. Utah Oil Development Co.'s No. 1, Cane Creek, 8-26-22, dr 1060 ft. Empire Gas & Fuel Co.'s No. 1, Gibson dome, 6-30-21, dr 230 ft. Boulder Knoll Oil & Gas Co.'s No. 1, Boulder Knoll, 17-34-24, dr 1206.

Kansas Wildcats

BARBER COUNTY—Skelly et al's Richardson 1, SWc 30-30-14, sd 4500 ft. Vickers Pet. Co. et al's Ott 1, SWc 30-32-14, dr 4315 ft. R. B. Brown's Martin 1, NWc 14-34-11, sd 1500 ft. Shaffer O. & G. Co.'s Alexander 1, C SE 13-33-13, dr 3275 ft.

BARTON COUNTY—Huffin et al's Smith 1, Smith 1, NE SE NE 17-19-11, sd 5100 ft.

COWLEY COUNTY—Branson et al's White 1, SEc SW SW 7-30-6, sd 1560 ft.

KINGMAN COUNTY—Harwood & Winters' Lindholm 1, C NE 22-28-5, sd 4026 ft. Crawford and McKenna's Beshere 1, NEc NW 30-28-5, 600 ft oih 4260 ft. Marland Oil Co.'s Padgett 1, NEc WS 11-28-6, dr 3460 ft. Fleeger et al's Greenleaf 1, NEc 13-28-7, ur 3880 ft. Cassody Oil Corp.'s Yeoman 1, C SE 35-28-7, dr 4435 ft. Phillips Pet. Co., McKenna 1, C NW 16-28-6, sd 4030 ft. Ozark Drilling Co.'s Richards 1, SEc NE SW 4-30-6, sd 4252 ft. Vickers & Stearns' Keimig 1, C NW 35-30-9, ur 3725 ft. Eben Pyle's Woolsey 1, NE SE 20-27-7, rig on ground.

LYON COUNTY—Culp et al's No. 1, SWc SE 25-19-10, spd. Gashe & Balliere's Stratton 1, SEc NW 32-20-13, lcn.

RENO COUNTY—Sheldon et al's Mangison 1, SEc NW 10-23-4, set cas 3100 ft. Marland Oil Co.'s O'Neil 1, C SW 7-23-6, cellar. Fleeger et al's Neiley 1, SEc NW 35-23-7, dr 2665 ft. Miss. Valley Oil Co.'s Pexrodd 1, SEc NW 25-24-7, sd 3725 ft. Cassody Oil Co.'s High 1, C SE 9-25-9, dr 3885 ft. Frank Hopper's Stevens 1, NWc 7-26-7, sd 4295 ft.

RUSSELL COUNTY—Keys Pet. Co.'s Sloan 1, C SE SW SE 2-13-15, dr 1630 ft. Wilcox Russell's Wilson 1, SE SW 14-12-13, dr 2220 ft.

SUMNER COUNTY—Stalling et al's Rice 1, C NE NE NW 3-32-2, sd 3812 ft.

SEWARD COUNTY—Wilson et al's Son 1, C NE NE NE 14-33-33, lost hole 600 ft.

Oklahoma Wildcats

CADDO COUNTY — W. J. Hartley's Calbreath 1, SEc NW SE 29-5-12, dr 3300 ft. Abernathy's No. 1, C NE NW 8-5-11, lcn; Abernathy No. 1, C SW NW 23-5-11, dr 785 ft.

CANADIAN COUNTY—Nannum, Frank & Slick's Pazourock 1, SW NE 29-13-33, dr 3815 ft.

CIMMARRON COUNTY — Ramsey Bros.' No. 1, C NW NE 27-5-5, dr 1532 ft. Fenton, Brokins et al's Shultz 1, SEc NE NE 2-2-0, sd.

COMANCHE COUNTY—Cherry & Couch's Ritchie 1, NWc 19-2-9, sd 1882 ft. Mid-Kansas O. & G. Co.'s Cox 1, NEc SE NE 30-1-13, no report.

GARFIELD COUNTY—Sinclair's Meyers 1, C SE NE 10-24-4, dr 3465 ft. Shaffer & Amerada's Bunker 1, NEc 32-34-4, cas trouble 4530 ft. Haley, Garber & Pulse' Chevekier 1, NWc SW 6-23-4, bad hole 4025 ft. Sinclair's Fee 1, SWc SW NE 2-20-5, dr 4437 ft.

GRANT COUNTY—Ostot Dev. Co.'s Snyder 1, NEc 6-28-3w, u· cas 4330 ft. Barzell & Moses' Royce 1, SWc NW 34-26-4, sd 550 ft. Dedman, Flenngan & Hennage's Sherran 1, NEc SW 16-26-3, sd 1910 ft.

HUGHES COUNTY—Sand Pet. Co.'s Harnage 1, C SE SE SE 10-8-9, sd 3373 ft. Magnolia Pet. Co.'s Medore 1, NWc SW 28-8-9, dr 3665 ft. Sorry & Swartz's Wallace 1, SFc NW SE 4-8-11, sd 3475 ft. Johnson et al's Bear 1, SWc SE NW 32-8-11, pb 1575 ft.

KIOWA COUNTY—A. C. Varner's Boham 1, SEc SW NW NW 5-6-10w, sd 1127 ft.

KINGFISHER COUNTY — Marland Oil Co.'s No. 1, SWc NW 12-18-5, ur 6-inch 4160 ft. Pet. Eng. Core Drilling Co.'s Canfield 1, C NW SE 6-16-7, rig. McKenna & Crawford's Sturgeon 1, NEc SW 27-16-6, ur 10-inch 1632 ft. Hoffman et al's Ottie 1, NWc NE 20-15-8, rig down. Reiter & Foster's Davidson 1, SWc 23-15-5, rig.

KAY COUNTY — Tom Palmer et al's Barclay 1, NEc NW 28-26-1, bailing 4114 ft. Ponco Lee Oil Co.'s McNeal 1, NE 32-26-2, fsh 2360 ft. Tonkawa Dev. Co.'s McDaniels 1, C SE SE SE 15-25-1, fsh 1140 ft. Marland Oil Co.'s School land 1, NEc NW 13-25-2, pulling cas 4046 ft.

LINCOLN COUNTY — Wentz Oil Corp.'s Lunkenbeal 1, SWc SE 34-17-2, dr 3000 ft. Mid-Kansas Oil & Gas Co.'s Griswold 1, NEc NW 33-17-4, dr 3935 ft. Olean Pet. Co.'s Morris 1, SEc NW NE 18-16-4, sd 4512 ft. Wilcox O. & G. Co.'s Lillibridge 1, NEc NW 25-15-3, sd 3764 ft.

LOGAN COUNTY—Bryan & Emery's Scott 1, NWc SE 33-19-4, dr 600 ft. Carter Oil Co.'s Rogers 1, SWc NW 32-19-3, recementing 3847 ft. Franklin Oil & Gas Co.'s Moore 1, SWc SE 28-18-4, dr 3975 ft. Santrock Drilling Co.'s Mathews 1, SW SE 11-18-3, rig. Haley & Pioneer's Quair 1, SWc SE 33-18-3, rig burned. Zigery et al's Barker 1, NWc NE NE 5-171, std 3500 ft. T. B. Slick's Berry 1, SWc SE 28-17-1, cementing 10-inch 2399 ft. Blackford O. & G. Co.'s Liar 1, C S L N½ SE 28-16-1, sd 1675 ft.

LOVE COUNTY — Schermerhorn-Ardmore's Dillard 1, SEc NE NW 25-6-2, dr 3740 ft.

NOBLE COUNTY—Geo. Miller's 101 Ranch 1, NEc 1-24-1, fsh 4300 ft.

OKFUSKEE COUNTY — T. A. Johnson's Leady 1, NEc SE SE 25-12-9, ur 850 ft. J. M. Kessle's Scott 1, SWc 8-12-11, sd 500 ft. J. W. McCullough's Carolina 1, NE NW SE 17-10-9, sd 3460 ft.

POTTAWATOMIE COUNTY — Shaffer et al's Ives 1, NWc SE SE 12-10-3, sd 3620 ft. McCullough's Madgett 1, NWc 2-10-4, set 5-inch 4245 ft. Tidal Osage's Kenyon 1, SWc SE SE 3-8-4, ur 4085 ft. Davis Detrick's McGathy 1, SEc NW 10-6-2, dr 4558 ft. Magnolia's Fyke 1, NWc NW 20-7-5, sd 3275 ft.

SEMINOLE COUNTY — Carter Oil Co.'s Harjocke 1, NEc NW NW 26-10-6, dr 2375 ft. Superior Oil Co.'s Noble 1, SEc SW SE 10-9-6, dr 2980 ft. Pure Oil Co.'s Joah 1, C E L NW NE 15-9-7, dr out cement 2952 ft. Magnolia Pet. Co.'s Strother 1, SEc NW 17-8-6, sidding rig. Empire G. & F. Co.'s Litka 1, SWc SW 3-7-6, swabbing 3663 ft. I. T. I. O. Co.'s Litka 1, C NE NE 9-7-6, sd 2781 ft. Magnolia's Jackson 1, SWc NE 22-7-7, dr 2750 ft.

TEXAS COUNTY—Valeriue O. & G. Co.'s No. 1, NWc 18-3-12, dr 3100 ft; No. 2, SEc SE 32-5-12, dr 3685 ft. H. F. Wilcox's Zea 1, SWc SE 29-3-13, fsh 3045 ft; Hovey 1, SEc SE 21-4-14, fsh 3720 ft. Foster-Reiter's No. 1, SEc SW 9-3-15, fsh 3380 ft. Haley, Garber & Pulse's Ellison 1, NWc SE SE 4-1-12, dr 2000 ft. Reiter-Foster's Kugle 1, C NE 10-2-11, rig pulled in. Connell et al's Tensey 1, SEc NW 5-1-19, spd and sd.

Arkansas Wildcats

COMPLETIONS

Company, Well and Location	Initial Production Bbls.	Depth
Union County—		
Natural Gas & Fuel Corp.'s Cordell 1, 9-18-13	*	3093
A. H. Stoltz's Wait 1, 4-18-16	*	2949
Thorpe et al's Peck 1, 22-18-13 ...	*	2090

BRADLEY COUNTY — Arkansas Fuel Oil Co.'s Ark. Lbr. Co. 1, 25-16-12, set 12½-inch 202 ft. Magnolia Pet. Co.'s Ark. Timber Co. 1, 35-15-11, dr 3110 ft. McMurray et al's Southern Lbr. Co. 1, 7-15-11, dr 3260 ft. Phillips Pet. Co.'s Southern Lbr. Co. 1, 36-11-16, dr 1845 ft.

COLUMBIA COUNTY — Gulf Ref. Co.'s Huggins 1, 31-17-22, dr 280 ft. Haynes et al's Runyon 1, 3-16-21, rig. K-Ark Pet. Co.'s Doss 1, 29-19-20, sd 2570 ft. Magnolia Pet. Co.'s Sawyer 1, 1-16-20, dk. Scott Phillips' Davis 1, 6-18-20, sd 2000 ft.

DREW COUNTY—McClintock et al's Ohle 1, 35-13-5, fsh 2530 ft.

GRANT COUNTY—Jones & Watkins' Meek 1, 5-4-11, dk pat.

HEMPSTEAD COUNTY — Burton et al's land 1, 23-10-25, fsh 2210 ft. Myers et al's Nicholls 1, 17-11-25, sdtr 2260 ft.

JEFFERSON COUNTY—Decem Oil Co.'s Hensley 1, 7-3-10, dr 2555 ft.

LA FAYETTE COUNTY — Arkansas Fuel Oil Co.'s Allen 5, 18-19-24, wosr 2788 ft. Ken-Saw Pet. Co.'s Red River 2, 3-20-24, sw 2840 ft.

LITTLE RIVER COUNTY—Greeson et al's Waldrip 1, 4-13-21, sd 1740 ft. Grote et al's Allen 1, 2-13-29, sw 2941 ft. Johnson et al's Hawkins 1, 10-11-31, dr 1930 ft.

MILLER COUNTY—Lenze et al's Dale 2, 28-15-26, set 10-inch 100 ft.

NEVADA COUNTY—Gruen et al's Fuller 1, 6-13-21, set 6-inch 1100 ft. Humble O. & R. Co.'s Bodcau 4, 9-15-22, dr 3095 ft.

OUACHITA COUNTY — Grayson et al's Reynolds 1, 21-14-17, dk. Van Diver et al's Yarbrough 1, 22-14-17, sd 1733 ft.

UNION COUNTY—Allison et al's Howard 1, 8-19-13, dk pat. Belmont et al's Hollis 1, 15-18-15, dr 2030 ft. Calgo Oil Co.'s Primm 1, 9-18-17, dr 2125 ft. Grimes & Jones' Van Hook 1, 8-18-14, set 5 3/16-inch 2215 ft. H. L. Hunt's Dykes 1, 21-18-12, dk pat. Mathews' et al's Lewis 1, 14-19-12, set 6⅝-inch 2650 ft. Marine Oil Co.'s Thompson 1, 10-18-13, 5 million cu. ft gas, spray sw, no oil, 2530 ft. Mullen Trust's Hill 1, 10-18-16, dr 1490 ft. Simms Oil Co.'s Simmons 1, 9-18-13, td 3115 ft, to plug back to gas sand above. Southern C. O. P. Co.'s Hill 1, 5-18-13, set 12½-inch 244 ft. Superior Oil Co.'s Cordell 1, 5-18-13, lcn. Walber et al's Cordell 1, 6-18-13, wosr 2984 ft. Wingfield et al's Horrison 1, 5-19-13, rig.

Louisiana Wildcats

COMPLETION

Company, Well and Location	Initial Production Bbls.	Depth
Union Parish—		
Clark Creek Oil Co.'s Frost-Johnson 1, 18-23-1e	*	2240

BIENVILLE PARISH — Collins & Woodley's Thomas 1, 23-16-10, set 6-inch 2548 ft. Kimbrough et al's Cargyle 1, 27-15-8, dk.

BOSSIER PARISH — Collins & Woodley's Roberson 1,22-23-12, dr 320 ft. Doern et al's Bolinger 1, 9-22-11, plugged back to 2673 ft.

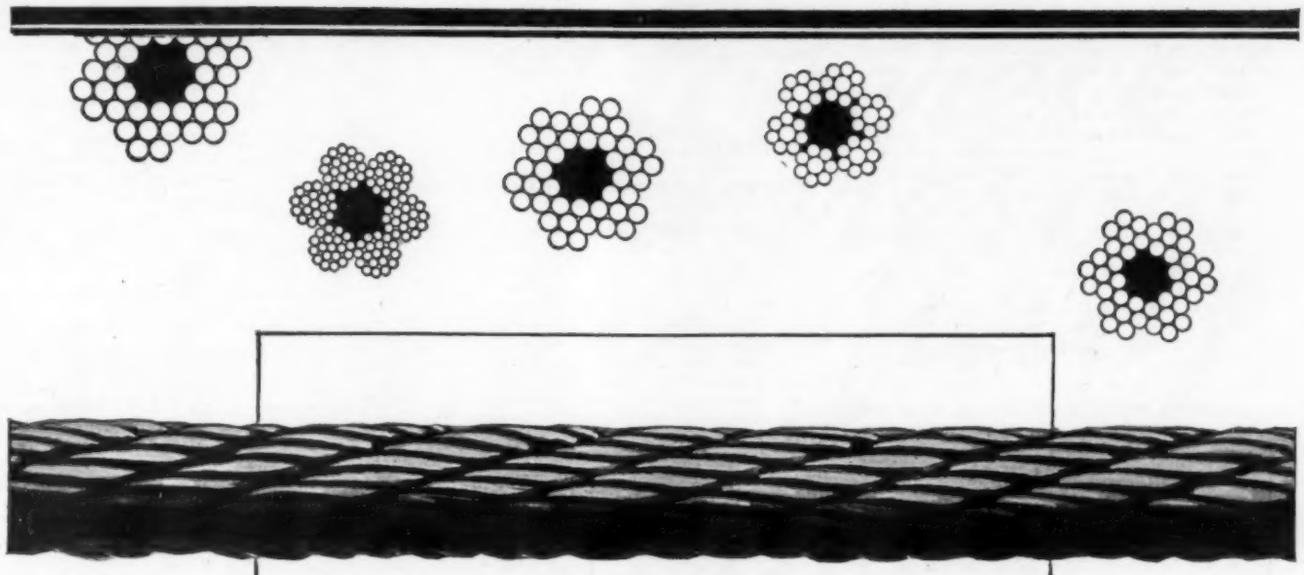
CADDO PARISH—Dixie Oil Co.'s Jolley 1, 27-22-15, fsh 4413 ft; Slattery 10, 27-21-15, dr 3100 ft. Magnolia Pet. Co.'s Bradford 1, 24-21-15, dr 4000 ft; Dillion 16, 5 million cu. ft gas 3672 ft, to deepen; Dillion 17, 24-21-15, 35 million cu. ft gas, 10,000 bbls sw, and show of oil, 3644 ft. Ohio Oil Co.'s Caddo Levee Board 1, 28-23-16, rig. The Texas Co.'s C. M. L. 42, 23-21-15, reset 4½-inch 3827 ft.

CATAHOULA PARISH — S. D. Hunter's Tensas Delta 1, 36-10-7e, set 10-inch 200 ft.

CALDWELL PARISH — Robbins et al's Beazley 1, 10-11-4e, sd 1020 ft. Southern Crude Oil Purch. Co.'s Caldwell A-5, 23-13-5e, dr 400 ft. Victor Wenzel's Caldwell 1, 22-14-4e, rig.

CLAIBORNE PARISH—Gilliland Oil Co.'s (Ramsey) Taylor B-10, 1423-8, dr 4920 ft. Triangle Drilling Co.'s Keen 1, 7-19-5, dr 4610 ft. Underwood et al's Bullock 1, 2-20-7, rig.

DE SOTA PARISH—Clarke & Melat's Billingsley 1, 12-11-16, rig. Craige & Montze's



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In every Wickwire Spencer Wire Line there is an ample margin of safety over its requirements. The right combination of strength, flexibility and elasticity has been provided.

Specifications have been established by careful study of oil field needs and actual tests on many jobs. These specifications are met with the utmost care by selecting the steel and strictly supervising every step in manufacture.

Accidents are reduced by the use of Wickwire Spencer Lines.

Wickwire Spencer Steel Company

General Offices
41 East Forty-second Street, New York

Los Angeles San Francisco Seattle

DISTRIBUTORS

CAFIFORNIA OIL FIELDS

George J. Hausen, Inc. Los Angeles—Taft—Wilmington, California

ROCKY MOUNTAIN OIL FIELDS

Great Northern Tool & Supply Co.
Kevin, Montana

Leidecker Tool Co.,
Casper, Wyoming

Midland Iron Works,
Billings, Montana

MID-CONTINENT OIL FIELDS

Murray Tool & Supply Co.,
Tulsa-Cleveland, Okla.

Federal Supply & Machine Co.,
Augusta-Winfield, Kansas

Norvell-Wilder Hardware Co.,
Beaumont-Houston, Texas and
Shreveport, Louisiana

Atlas Supply Co.,
Fort Worth - Vernon - Panhandle
Texas

EASTERN OIL FIELDS

Slicker Pipe & Tool Co., Knox, Pa.

L. J. Cummins, Oil City, Pa.

McDonnell Brannen Co., Boliver, N. Y.

J. S. Young, Jr., Lawrenceville, Ill.

New Martinsville Supply Co., New Martinsville, W. Va.

A. F. Keck & Co., Butler, Pa.

Lloyd Smith Co., Bradford, Pa.

H. B. Mitchell Co., Emlenton, Pa.

G. A. Blair & Sons, Clintonville, Pa.

Elms Brothers, Waynesburg, Pa.

Diamond Supply Co., Charleston, W. Va.

Penn Pipe & Supply Co., Sheffield, Pa.

Leidecker Tool Co., Marietta, Ohio

Wooster Tool & Supply Co., Wooster, Ohio

Lawrenceville Machine Co., Lawrenceville, Ill.

WICKWIRE SPENCER STEEL

WICKWIRE SPENCER *PRODUCTS*

Say you saw it in The OIL WEEKLY

Riggs 1, 28-15-15, sd 1380 ft. Dixie Oil Co.'s Jenkins 1, 9-12-11, sd 4683 ft. Helm et al's Joyner 1, 28-11-12, set 12½-inch 150 ft. Snapp et al's Flores 1, 27-11-11, dr 2865 ft.

EAST CARROLL PARISH—T. A. Snell's Gordon 1, 34-20-12e, dr 915 ft.

FRANKLIN PARISH—Arkansas Fuel Oil Co.'s Blue 1, 9-12-6e, dr 40 ft. R. W. Williams' Elkhart-Lemon 1, 17-14-8e, set 10-inch 68 ft.

GRANT PARISH—Billeaud et al's Ball 1, 19-7-1, dr 900 ft. Gulf Ref. Co.'s Swope 2, 17-9n-1e, sw 1610 ft. Holmes et al's Holmes 1, 17-9-n-1e, dk; Holmes A-1, 17-9n-1e, dk pat. J. L. Holmes' Fee 2, 17-9n-1e, dk. Humble O. & R. Co.'s L. & A. Oil Co. 11, 29-9n-2w, lcn. Keen & Wolff's Rider 1, 16-9n-1e, dr 1945 ft. J. J. Long's Calhoun 1, 4-7-4w, sd 1285 ft. Tunica Pet. Co.'s L. & A. Oil Co. 8, 11-8n-2w, sd 250 ft; L. & A. Oil Co. 9, 3-8-2w, dk; L. & A. Oil Co. 10, 8-8-1w, dk.

JACKSON PARISH—El Dorado Chief Oil Co.'s Jones 1, 3-14-4w, sd 2610 ft. Ferguson Trust's Martin 1, 3-15-1e, dr 2925 ft. Grigsby & Co.'s Adams 1, 22-17-4w, sd 2400 ft. Hussman et al's Norton 1, 34-15-3w, sd 400 ft. Louisiana Pet. Co.'s Theus 2, 12-16-3w, dr 610 ft. Raymond et al's Davis 1, 13-16-2e, rig.

LA SALLE PARISH — Tunica Pet. Co.'s L. & A. Oil Co. 13, 25-8-1e, dr 2025 ft; L. & A. Oil Co. 14, 29-7-4e, dr 165 ft; L. & A. 15, 7-8-2e, dk.

LINCOLN PARISH — Arkansas Fuel Oil Co.'s Nobles 1, 18-19-3w, set 12½-inch 152 ft. Buckley & Palmer's Devis 1, 12-20-3w, dr 2565 ft.

NATCHITOCHES PARISH — Brothers et al's Cockfield 1, 78-7-5w, r 1866 ft. Forest Trust's Ayers 2, 3-13-7, sd 1900 ft. Gulf Ref. Co.'s Louisiana Long Leaf A-1, 39-7-7, dr 1650 ft. Keator et al's Pearson 1, 46-8-6w, dr 900 ft. Lawson et al's Clark-Morse 1, 23-5-6w, lcn. McCormick et al's Russell 1, 41-10-7, r 1700 ft. Ohio Oil Co.'s Louisiana Long Leaf 2, 20-8-8w, dr 785 ft. J. F. Palmer's Edenborne 1, 4-11-6, sd 2015 ft. E. Seti's Fisher 1, 18-8-9w, dr 2610 ft. The Texas Co.'s Moss 1, 31-7-8w, rig.

OUACHITA PARISH—Ouachita N. G. & O. Co.'s D'Abonne 2, 25-19-2e, coring 2565 ft.

RAPIDES PARISH—Hincy & Mack's Barrow 1, 29-5-2e, sd 2800 ft. Minnesota Oil Co.'s Wattermark 1, 7-5-3w, sd 600 ft. Libuse O. & G. Co.'s Voda 1, 12-4-1e, dr 2100 ft. Selp et al's Ball 1, 41-4-2w, dr 2160 ft.

RICHLAND PARISH—Aarnes et al's Hawley 1, 3-18-9e, dk pat. Gulf Ref. Co.'s England 1, 32-17-6e, dr 1765 ft; Weyman 1, 23-18-8e, dr 2860 ft. Oliver et al's Hatch 1, 2-15-5e, dk pat. Roxana Pet. Co.'s Humble 1, 10-15-6e, dr 300 ft.

SABINE PARISH—Emlet et al's Bowman-Hicks 5, 8-7-12, sd 4070 ft; Bowman-Hicks 7, 11-7-14, sd 2121 ft; Sabine Lbr. Co. 1, 8-7-1e, dk. Godchaux et al's Mills 1, 12-4-13, sd 920 ft. Magnolia Pet. Co.'s Louisiana Long Leaf 1, 16-6-11, r 1750 ft. Lewis Pet. Co.'s (Reliance) Wyatt 1, 23-5-12, set 10-inch 169 ft.

UNION PARISH — Camette et al's Tugwell 1, 21-22-1e, dk. Gulf Ref. Co.'s Nelson 1, 5-19-1e, dr 2775 ft.

WEBSTER PARISH—Labore et al's Bruner 1, 30-19-10, sd 378 ft. Ohio Oil Co.'s Bank of Cotton Valley 4, 22-21-10, dr 3175 ft. Smitherman & McDonald's Oakley 1, 29-23-11, dr 4910 ft. Suthern Crude Oil Purch. Co.'s Munn-Wadley 1, 1-22-10, fsh 4620 ft.

WINN PARISH—Allen Drilling Co.'s Sanders 1, 21-13-2w, dr 1770 ft. Dodge et al's Tremont 1, 35-13-3w, rig. Humble O. & R. Co.'s L. & A. Oil Co. A-15, 26-10-2w, rig. Hyde & Nelson's Louisiana Central Lbr. Co. 1, 16-13-1w, rig. J. C. Long's Milam 1, 28-13-3w, set 6-inch 684 ft. Ohio Oil Co.'s Edenborne 1, 4-12-1w, dr 2620 ft.

Texas Panhandle District

COMPLETIONS

Company, Well and Location	Initial Production Bbls.	Depth
Carson County—		
Republic Prod. Co.'s C. R. Garner 1, shot	150	3138
Collingsworth County—		
Gibson Oil Corp. et al's Williams 1	¶5	2215
Hutchinson County—		
Gibson Oil Corp. et al's McCormick 1	*	3206

DRILLING REPORT

ARMSTRONG COUNTY — Red Hill Oil Corp.'s Puckett 1, sd 1750 ft.

BRISCOE COUNTY — Smith-Baker et al's J. W. Owens 1, lcn.

CARSON COUNTY—Amarex Dev. Co.'s E. S. Polling 1, sd 1980 ft. Champlin Ref. Co. et al's E. F. Bryan 1, rig. Empire Gas & Fuel Co.'s Magnolia Fee 1, rig. Humble O. & R. Co.'s Fee 1, rig. Marland Oil Co.'s E. F. Bryan 1, dr 515 ft; Bryan 2, spudding. McMan Oil & Gas Co.'s E. F. Bryan 1, dr 515 ft; Bryan 2, lcn; Bryan 3, rig; Bryan 4, lcn. Mound Valley Oil Co. (was Gibson Oil Corp.'s) G. W. Witter 1, dr 2770 ft. Navajo Oil Co.'s E. S. Polling 1, dr 1465 ft. Nunn & McAulev's E. F. Bryan 1, dr 585 ft. Prairie Oil & Gas Co.'s G. W. Deahl 1, cemented cas 1960 ft to 2460 ft; J. W. McConnel 1, rig. Republic Prod. Co.'s C. R. Garner 1, completed 150 barrels after shot 200 qts 3055-3138 ft. Roxana Pet. Corp.'s E. F. Bryan 2-A and 3-A, rig; Bryan 1-B dr 1015 ft; Bryan 1-C, rig; Bryan 1-D, rig. Southwestern Oil & Dev. Co.'s C. R. Garner 1, rig. The Texas Co.'s Magnolia Fee 1 and 2, rigs. White Deer Oil Co.'s Jordan-Brown 1, sd showing salt water 3140 ft; Jordan-Brown 2, rig.

CASTRO COUNTY—Gulf Prod. Co.'s S. Clements 1, rig.

CHILDRESS COUNTY—Gibson Oil Corp.'s Smith 1, fsh 2600 ft. C. L. Sloane et al's B. P. Smith 1, rig.

COCHRAN COUNTY—J. C. Whicker et al's G. C. Landen 1, dr 325 ft.

COLLINGSWORTH COUNTY—Allmen et al's McDowell 1, dr 510 ft. Duke & Langford's M. Johnston 1, lcn. Gibson Oil Corp. et al's Williams 1, complete as gasser at 1927-1940 ft, after plugging back from salt water at 2205-15 ft. Martin et al's Mrs. T. V. Norwood 1, spd and sd. Hamon & Reams' Wilson-Scott 1, lcn.

DALLAM COUNTY—James et al's James 1, sd 2875 ft. Harry Skelly et al's Capital Synd 1, dr 675 ft.

DEAF SMITH COUNTY—C. C. Julian & DeGrace's Mrs. R. A. Hindley 1, lcn. Red Hill Oil Corp's Barrett 1, lcn.

DONLEY COUNTY—A. T. Drilling Co.'s F. E. Harrington 1, sd 280 ft.

GRAY COUNTY—Bayshore Pet. Co.'s C. W. Bradford 1, casing off 165,000,000 ft dry gas, td 2666 ft. Archer Blake et al's Furneaux 1, spd and sd. Blackwell & McGee's Bowers 1, dr 750 ft. Boone Drilling Co.'s I. S. Mackie 1, rig. British-American Oil Co.'s J. E. Meers 1, lcn. Canyon Oil Co. et al's Jackson 1-A, set 8¼ cas 2365 ft. Jules Constantine et al's W. F. Dial 1, sd 2000 ft. Cranfill Bros. Oil Co.' T. B. Noble 1, dr 2690 ft. H. B. Eller et al's J. E. Crews 1, spd and sd. Gray County Pet. Co.'s W. L. Herndon 1, lcn. Jack Greenwood et al's H. B. Lovett 1, dr 2030 ft. Johnson-Martin et al's Fanny Holloway 1, lcn. Magdelline Oil Co.'s J. E. Williams 1, spd and sd. Nabob Oil Co.'s J. S. Morse 1, dr 2170 ft. Pampa Oil Co.'s W. R. Campbell, sd 965 ft. Pampa Pet. Co.'s Mary Leopold 1, spudding. Henry Riley & Heck's Mrs. Hopkins 1, rotary rig. Roxana Pet. Corp's B. E. Finley 1, Elev. 2936 ft, testing sandy-lime pay with 2000 ft OIH 3012-19 ft. Skelly Oil Co.'s A. G. McKay 1, spudding. Slay et al's J. M. White 1, dr 1215 ft. The Texas Co.'s H. M. Barrett 1, lcn; O. N. Frashier 1, rotary rig; E. M. Osborne 1, lcn; C. W. Saunders 1, dr 3030 ft. Travis et al's J. Back 1, rig. Upham Gas Co.'s W. E. Gammage 1, rig. Weir-Krib & Finklea's B. F. Talley 1, spd and sd.

HANSFORD COUNTY—Caldwell et al's J. Adriance 1, lcn. F. W. Dillard et al's F. A. Davis 1, spd and sd. Oklavania Oil Co.'s Whitson 1, sd 1050 ft.

HARTLEY COUNTY—Amerada Pet. Corp.'s F. Farewell 1, rig. Deep Rock Oil Co.'s Lyman-Balfour 1, sd 1710 ft. Eslick et al's A. G. Irving 1, sd 1500 ft. W. H. Holmes et al's C. B. Coots 1, dr 1210 ft. Humble Oil & Refining Co.'s J. M. Shelton 1, dr 2155 ft. Kork Oil Co.'s J. M. Shelton 1, spd and sd. James E. McKanna et al's E. S. Collins 1, dr 425 ft; Francis Fawell 1, set 10-inch cas 6120 ft; J. M. Shelton 1, sd 1990 ft. Breck Walker et al's Stone 1, lcn.

HEMPHILL COUNTY—Andrade et al's Humboldt 1, lcn. A. J. Calhoun et al's J. C. Isaacs 1, rig. Dorning et al's Alexander 1, spd and sd. F. E. Hoover et al's Fee 1, dr 2505 ft; Shaller 1, spd and sd. S. R. McCorkle et al's Shaller 1, rig. Fisher Oil Co. (was Mitchell et al's) J. E. George 1, dr 2485 ft.

HOCKLEY COUNTY—El Capitan Oil Co.'s Ellwood 1, dr 1570 ft.

HUTCHINSON COUNTY — Anderson & Pritchard's Yake 1, cemented cas 1230 ft. Big Creek Oil Co.'s Merchant 1, flowing 60 bbls. daily, sd for pipe line, 2708-10 ft. Burge et al's W. R. Harvey 1, rig. Clark-Hagey et al's Yake 1, sd 1800 ft. Dominion Oil Co.'s C. H. Jasper 1, dr 460 ft. Donald Oil Co.'s W. B. Haile 1, dr 2205 ft. Flanders Oil Co.'s W. R. Harvey 1, rig. Lee Flowers & Marland's Carver 1, sd 1195 ft. Get Oil Co.'s W. P. Allen 1, spd and sd Gibson Oil Corp.'s McCormick 1, dry 3206 ft. Golden Eagle Oil Co.'s J. Q. Bost, 1, rig. Gopher Oil Co.'s Tom Lewis 1, sd for storage 2935 ft. Great Western Oil Co.'s T. D. Lewis 1, rig. Panfield Oil Co.'s Lubingylel, dr 720 ft. Pole Cat Oil Co.'s W. B. Haile 1, rig. Permier Oil Co.'s E. B. Jones 1, rig. Rock Island Oil Co.'s W. A. Starnes 1, dr 490 ft. Sinclair Oil & Gas Co.'s J. L. Williams 1, 20,000,000 ft gas 2535 ft, setting 8¼ cas 2612 ft. The Texas Co.'s Burnett 1, sd 3770 ft; T. D. Lewis 1, lcn. Wentz Oil Corp's Merchant 1 sd for storage with 2000 ft OIH at 2777-78 ft. Western Oil & Dev. Co. (W. W. Silk's) O. W. Jarvis 1, Elev. 3214 to top big lime 2605 ft fsh 3485 ft.

LAMB COUNTY—E. C. Marrs et al's Yellowhouse Ranch 1, stdz 1724 ft.

LIPSCOMB COUNTY—Everett et al's Mrs. H. D. May 1, dr 390 ft. Snyder et al's A. Barton 1, dr 3065 ft.

MOORE COUNTY—Amarillo Co.'s Masterson 1-J, fsh 2425 ft; Terry Thompson 1, dr 1735 ft. Merle Cadman et al's Sneed 1, making 8,000,000 ft gas, dr 3025 ft. Clark-Harbin & Baldridge (Prairie's) O. E. Gober 1, sd 750 ft. Douglas Oil Co.'s H. E. Beauchamp 1, sd 705 ft. Lee Flowers et al's Sneed 1, dr 2775 ft. Humble Oil & Ref. Co.'s Kilgore 1, dr 1410 ft. Masters Oil Co.'s Sneed 1, set 12½ cas 1060 ft. Moore County Oil Co.'s Sneed 1, dr 1220 ft. Morton & Co.'s H. C. Rubert 1, dr. 980 ft. Phillips Pet. Co.'s Sneed 1, sd 3095 ft. Prairie Oil & Gas Co.'s Sneed 1, sd in water 3062 ft. Shadler Bros. et al's John Lowery 1, rig.

MOTLEY COUNTY—Chechako Oil Co.'s J. W. Owens 1, lcn.

OCHILTREE COUNTY—W. G. Burton et al's Stickler 1, sd 3540 ft. Hamilton et al's R. E. Wambel, sd 250 ft. McCorkle Pipe Line Co.'s R. H. Moore #1, sd 1600 ft. McCorkle et al's Weintt 1, rig. Standard Dev. Co.'s Bowen 1, sd 900 ft.

PARMER COUNTY—Humble Oil & Ref. Co.'s Farewell 1, rig.

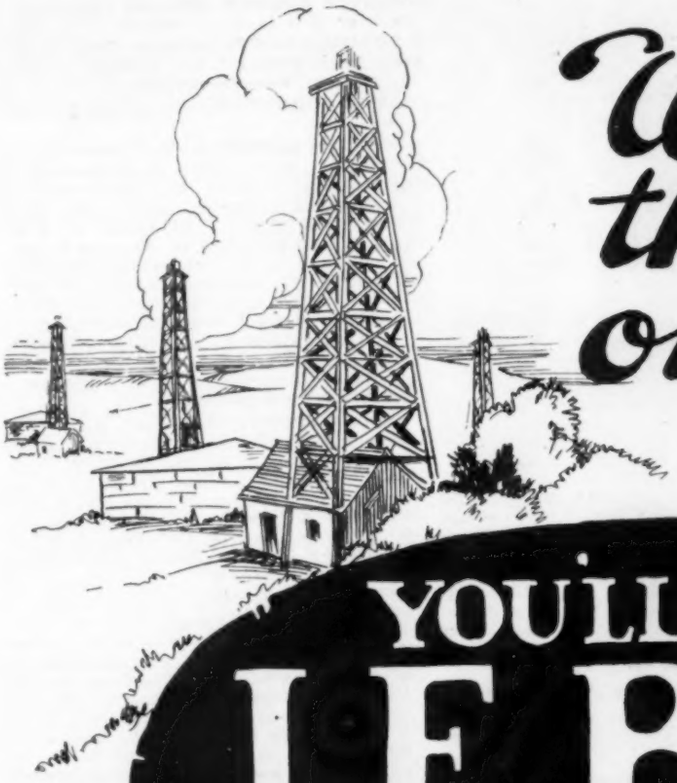
POTTER COUNTY—Amarillo Oil Co.'s Lee Bivin 5-A, completed gasser, td 2650 ft; Fuqua 1, cemented 12½ cas 2025 ft. The California Co.'s W. H. Bush 1, fsh 487 ft. Farmers Oil & Gas Co.'s J. A. Jones 1, spd and sd. Gulf Prod. Co.'s W. H. Bush 1, top big lime 2180 ft, dr 3425 ft. Kelmey Oil Co.'s (was Kelly-Harris) W. H. Bush 1, rig.

RANDALL COUNTY—Red Hill Oil Corp.'s J. M. Redfearn 1, dr 490 ft.

ROBERTS COUNTY—Big Bend Oil Co. (was Phil Engle's) Mrs. Ledrick 1, dr 4100 ft Gibson Oil Corp's T. S. Jones 1-A, set 12½ cas 780 ft. Charles Page et al's Hamilton 1, fsh 700 ft. Murphy et al's A. W. Gill 1, dr 210 ft. Pan-State Oil Co.'s A. H. Tandy 1, rig. Pettijohn et al's J. A. Meade 1, spd and sd. Trammel et al's A. G. Hammond 1, spd and sd.

SHERMAN COUNTY — Eclipse Oil Co.'s Bivins 1, rig. Get Oil Co.'s Bivins 1, dr 560 ft. Phillips Pet. Co. & Savoy Oil Co.'s G. Roach 1, sd 1650 ft.

SWISHER COUNTY—Keagans & Baker's Stalling 1, spudder machine. Overson & Kea-



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LE BUS
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ELECTRA, TEXAS

Say you saw it in The OIL WEEKLY

gans' L. H. Woodward 1, plugged and abn 840 ft.

WHEELER COUNTY—American Ref. Co.'s E. E. Carlton 1, lcn. Angus et al's L. C. Burcham 1, rig. Boyles-Johnson et al's S. L. Lewis 1, rig. Gibson Oil Corp. et al's H. C. Phillips 2, rig; Phillips 4, dr 1490 ft. Hill-Cook & Riley's L. H. Webb 1, dr 710 ft. Laycock Oil Co.'s Laycock 1, rig burned, td 2000 ft. Magnolia Pet. Co.'s C. E. Johnson 1, rig. Murchison-Fain Oil Co.'s Binkley-Cain 1-A, rotary rig; Close 1, rotary rig. J. C. Rook et al's T. C. Jones 1, sd 1310 ft. Scott-Allen & Bledsoe's J. H. Jackson 1, making 20 million ft ags 2115 ft, sd to mbb 2130 ft. Smith-Brady et al's P. J. Sorenson 1, fsh cas 700 ft. The Texas Co.'s Smith-Lewis 1, dr 1720 ft. Upham Gas Co.'s Alexander 1, rig; Cody 1, sd 260 ft; Griswold 1, rig; Martin 1, 10 million ft gas 1865-1955 ft, dr 2005 ft. Hal Vaughan et al's O'Gorman 2, dr 1160 ft. E. L. Woodley et al's Woodley 1, dr 1810 ft. World Oil Co.'s Jackson 1, dr 1360 ft.

West Texas Wildcats

COMPLETIONS

Company, Well and Location	Initial Production Bbls.	Depth
Concho County—		
Culbertson Bros. & Co.'s W. G. See 1	*	1565
K. Kimberlin et al's W. O. Schultz 1	*	1572
Crane County—		
Bill Dunning's Crier-McElroy 1	960	2802
Gulf Prod. Co.'s Crier-McElroy 1	1390	2740
Crier-McElroy 2	650	2820
Marland Oil Co.'s Hughes 2-C	105	2323
Hughes 3-C	150	2324
The Texas Co.'s H. M. King 7	165	2330
Jeff Davis County—		
Herbert Oil Co.'s T. M. Wingo 1	*	3012
Ector County—		
J. S. Cosden et al's Connell 1-B	*	3862
Taliaferro & Sid Richardson's Henderson 1	*	3502
Howard County—		
Marland Oil Co.'s Otis Chalk 3	100	1618
Jones County—		
Marland Oil Co.'s Harris-Mason 1	†	815
Pecos County—		
Dixie Oil Co.'s Mrs. Hersheusen 1	*	5354
Reeves County—		
Carl Cromwell et al's TP Fee 1	*	3500
Upton County—		
Humble O. & R. Co.'s J. T. McElroy 1	*	3974
Val Verde County—		
Plateau Oil Co.'s B. S. Harrison 1	*	3507

DRILLING REPORT

ANDREWS COUNTY—Amon G. Carter & Zweifel's Cowden 1, rig. Maer-Staniforth's W. S. Taylor 1 ,lcn. Henry Zweifel et al's Means 1, lcn.

BREWSTER COUNTY — Green Valley Oil Corp.'s J. P. Wilson 3-S, dr 630 ft. John Roseborough et al's Skinner 1, ur 1290 ft.

COKE COUNTY—Lipan Oil Co.'s C. E. Rawlings 1, fsh tools 2706 ft.

CONCHO COUNTY—Culbertson Bros. & Co.'s See 1, dry 1565 ft. Eugene Mays et al's Wilson-Hartgrave 1, dr 1005 ft. The Exploration Co.'s Hartgrove 1, dr in water 1115 ft. K. Kimberlin et al's Schultz 1, dr 1572 ft.

CRANE COUNTY — Duffey Bros. et al's Cowden 1, elevation 2461 ft, top salt 752 ft, dr 2510 ft; Griffith 1, dk. Bill Dunning's Crier-McElroy 1, flowing 900 bbls oil at 2753-2802 ft. Gulf Prod. Co.'s Crier-McElroy 1, flowed 1390 bbls 2699-2740 ft; Crier-McElroy 3, flowing 165 bbls 2741-2812 ft; J. T. McElroy 2-A, elevation 2601 ft, top salt 1000 ft, dr 1145 ft; University-Lassiter 1, elevation 2608 ft, top salt 1163 ft, dr 2075 ft. Independent O. & G. Co.'s Hughes 1, testing oil pay 2310-2472 ft. Magnolia Pet. Co.'s University-Hardwick 1, elevation 2599 ft, top salt 1110 ft, dr 1475 ft; O'Keefe-University 2, dr 2440 ft; O'Keefe-University 3, lcn; University-Lassiter 1, rig. Magnolia Pet. Co. et al's University-Church 3, rig. Marland Oil Co.'s Cowden 1-A, elevation 2557 ft, top salt 660 ft, Cowden 2-A, lcn; Dawson 1, elevation 2510 ft, top salt 670 ft, dr 2490 ft; Durham 2, elevation 2551 ft, top salt 640 ft, set 8¼-inch cas 1600 ft; Durham 3, top salt 630 ft, dr 770 ft; Hughes 4-C, dr 290 ft; Hughes 2-D, top salt 670 ft, dr 770 ft; Hughes-Gibbs 2, dr 1110 ft; Gibbs 1, plugging back from water 2333 ft. Prairie O. & G. Co.'s University 1, elevation 2590 ft, top salt 1140 ft, dr 1510 ft; University 2, elevation 2591 ft, top salt 1148 ft, fsh 1400 ft; University 3, lcn; University O'Keefe 1, rig. Ben D. Simon et al's Brookfield 1, elevation 2317 ft, top salt 680 ft, dr 965 ft. Simms & Atlantic's University 1, dr 365 ft. The Texas Co.'s King 10, elevation 2559 ft, top salt 660 ft, dr 915 ft; King 11 ,dr 660 ft; King 12, rig. Tidal Oil Co.'s University 2-B, dr 440 ft; University 1-C, dr 1120 ft. Henry Zwelfel & Hofmeier's Cowden 1, spudding.

CROCKETT COUNTY—Cranfill Bros. Oil Co.'s Harris 1, dr 440 ft. Cumberland O. & G. Co.'s Couch 1, sd 2025 ft. Gulf Prod. Co.'s Powell 1-D, ur 8¼-inch cas 2410 ft. J. K. Hughes Dev. Co.'s Powell 2-A, dr 2360 ft; Powell 3-A, dr 2400 ft; Powell 2-B, dr 2445 ft. Humble & Marland's Powell 1-B, top salt 1155 ft, dr 2125 ft. Magnolia Pet. Co.'s Shannon 2, rig. Republic Prod. Co.'s Powell 1, elevation 2754 ft, top salt 1125 ft, testing hole full oil 26-16-40 ft. Schaffer et al's University 1, swab 10 bbls oil, td 2191 ft. Ben Simon & Cromwell's Shannon 1, fsh 2820 ft. Young & Cromwell's Shannon 1, fsh 500 ft. Wilcox O. & G. Co.'s University 1, dr 4865 ft.

CULBERSON COUNTY—Big Lake & Plymouth Oil Co.'s C. L. Cass 1, dr 980 ft. James H. Gardner et al's Radford-State 1, rig. Pure Oil Co.'s TP Fee 1, dr 335 ft.

JEFF DAVIS COUNTY—Herbert Oil Co.'s Wingo 1, dry 3012 ft. Humble O. & R. Co.'s W. W. McCutcheon 1, co 3337 ft. J. K. Hughes Dev. Co.'s J. Z. Means 1, fsh 640 ft; Means 2, lcn.

ECTOR COUNTY—J. S. Cosden et al's Connell 1-A, swabbing oil 3465-3537 ft; Connell 1-B, dry 3862 ft. The Exploration Co.'s TP Fee 1, water trouble, td 3875 ft; Slator 1, rig. Llano Oil Co. et al's Cowden 1, co to drill deeper, td 3508 ft. Taliaferro & Sid Richardson's Henderson 1, dry 3502 ft.

FISHER COUNTY—Ideal Oil Co.'s W. F. Martin 1, sd 3470 ft. R. W. Raney et al's Marberry 1, sd 1502 ft. Clark et al's Wheeler 1, lcn.

GLASSCOCK COUNTY—Marland Oil Co. et al's Calder 1, cas trouble 2190 ft. Plateau Oil Co.'s L. S. Bell 1, sd 1110 ft. Texon & Marland's Settle 1, lcn.

TOM GREEN COUNTY—M. D. Bryant et al's Llano Fee 1, crooked hole 2980 ft. Texon & Marland Oil Co.'s Sorrell 1, dr 1180 ft. World Oil Co.'s Pulliam 1, dr 3575 ft.

HOWARD COUNTY—Gulf Prod. Co.'s Otis Chalk 1, rig. Humble O. & R. Co.'s Douthitt 1, dr 980 ft. Lockhart & Carey's Roberts 1, sd 830 ft; Chalk 1-A, co after shot 30 quarts at 1555-82 ft; W. T. Scott 1, dr 2070 ft. Magnolia Pet. Co.'s Mary Chalk 1, testing oil pay 1563 ft; Mary Chalk 2, lcn; Otis Chalk 3, dr plug 1375 ft; Chalk 4, lcn; Chalk 3-A, swab 1000 bbls oil 1581-99 ft; Chalk 4-A, dr rotary 1275 ft. Marland Oil Co.'s Chalk 3, swab 100 bbls oil after shot 1605-23 ft; Chalk 4, dr 1333 ft; Chalk 5, rig; Chalk 1-A and 2-A, lcns. Reeves-Apperman et al's H. R. Clay 1, dr 950 ft.

JONES COUNTY—Atlantic Oil Prod. Co.'s Howe 1, rig. Bateman & Campbell's Southard 1, lcn. Cole-Hart et al's W. B. Cranston 1, lcn. Hucony Gas Co.'s Arthur Sears 1, dr 1325 ft; Wright 1, dr 1305 ft. Gillette & Hickey's S. W. King 1, show oil and gas at 1588-90 ft; Young 1, sd 360 ft. Marland Oil Co.'s S. R. Cox 1, dr 2415 ft; Harris-Mason 1-A, rig. Mid-West Exploration Co.'s Thornton 1, dr 1920 ft. Muse-Robertson's Manley 1, machine. Vic H. Martin et al's Culbertson 1, rig. Phillips Pet. Co.'s Joe Winters 2, rig; Walling 1, dr 1720 ft. Talioferro & Wentz Oil Co.p.'s King 1, ur 1945 ft. World Oil Co.'s Boney & Stanford 1, dk. Zeigler et al's Reeves 1, rig.

KENT COUNTY—The Texas Co.'s Barren 1, sd 4362 ft.

KIMBLE COUNTY—Dixie Oil Co.'s Harrison 1, dr 1360 ft.

LOVING COUNTY — Duffey Bros. & Arnold's W. D. Johnson 1, lcn. Lockhart & Co.'s R. L. Allen 1, cemented 6⅝-inch cas 4016 ft.

LYNN COUNTY—Hart Oil Corp.'s Edwards 1, sd 1390 ft.

MENARD COUNTY — J. R. Lewis et al's White 1, sd 180 ft. Clark et al's Kotham 1, spd and sd.

MITCHELL COUNTY—Magnolia Pet. Co.'s Foster 2, fsh 1510 ft. Mid-Kansas O. & G. Co.'s Ellwood 2, dr 2710 ft. Morrison-Thompson's Griffith 1, rig. Owen-Sloan Oil Co.'s C. P. Conway 1, show oil at 3183-85 ft, dr 3205 ft. Teas-Stivers et al's Hardee 1, fsh 475 ft. F. P. Zoch et al's J. J. Ford 1, dr 2860 ft.

NOLAN COUNTY — Hucony Gas Co.'s Arthur Sears 1, elevation 1950 ft, dr hard gary lime 2805 ft. Henry Zweifel & Hofmeier's Longbotham 1, dr 185 ft.

PECOS COUNTY — Benedum-Trees' J. C. Trees 1, sd 675 ft. Cromwell-Kimberlin's Scharff-Blackman 1, spd and sd. J. G. Buell-Hagan et al's So. Life Ins. Fee 1, fsh 575 ft. Dixie Oil Co.'s Hersheusen 1, dry 5354 ft. Mid-Kansas O. & G. Co.'s I. G. Yates 1, dr 410 ft. Transcontinental Oil Co.'s Perry 1, sd 3535 ft. Quinby Oil Co.'s Bennett 1, sd 300 ft; Townsite 1, sd 3280 ft.

PRESIDIO COUNTY — Hadlock-Miller et al's Tootle 1, sd 2255 ft.

REAGAN COUNTY—Camp et al's University 1, sd 2786 feet. Cope-Hagan et al's L. H. White 1, lcn. The California Co.'s University 3, spudding. Hiawatha Oil Co.'s University 1, rig. Moody Oil Corp.'s Sawyer 1, top salt 1240 ft, fsh 1450 ft. Roxana Pet. Corp.'s Boyd 1, elevation 2650 ft, top salt 1155 ft, top lime 2900 ft, sulphur water at 3134 ft. Texon & Marland's Sawyer 1, dr 2765 ft. Texon Oil & Land Co.'s University 5, Group 2, top salt 1370 ft, top lime 3130 ft, dr 3140 ft; University 6, rig.

REEVES COUNTY — Cromwell et al's TP Fee 1, dry 3500 ft. Deep Rock Oil Co.'s Caldwell 1, materials. Grisham-Hunter Corp.'s State Fee 1, dr 1900 ft. World Oil Co.'s B. T. Biggs-Holder 1, dr 360 ft.

RUNNELS COUNTY—Red Bank Oil Co.'s Fowler 1, water trouble 1555 ft. F. P. Zoch et al's Bruce 1, fsh 1530 ft. Frank Yates et al's McMillan 1, materials.

SCHLEICHER COUNTY—Beavers-Leath et al's Whitten 1, spd and sd. Cope-Dalton et al's Sol Meyer 1, dr 2425 ft.

SCURRY COUNTY—Northwest Co.'s T. C. Stinson 1, dr 670 ft.

STERLING COUNTY—The California Co.'s J. T. Davis 2, dr 875 ft. Co-Operative Dev. Co.'s Douthitt 1-A, sd 3230 ft. The Exploration Co.'s C. A. Broome 1, dr 3050 ft.

TAYLOR COUNTY—City of Abilene's Fee 1, dr 1660 ft. Sanger O. & R. Co.'s R. H. Anderson 2, dr 2005 ft; Cox 1, dr 1660 ft.

TERRELL COUNTY—Sun Oil Co.'s N. M. Scott 1, dr 2260 ft. E. T. Williams et al's Cowden 1 ,ur with hole full water 2800 ft.

TERRY COUNTY—Kingsland Oil & Potash Co.'s Brownfield 1, dr 470 ft.

UPTON COUNTY—Gulf Prod. Co.'s Sanger 1, show oil and gas 3450-60 ft, dr 3485 ft; Shirk 1-E, dr 85 ft. L. E. Hults et al's Giddings 1, rig. Johnson-McCamey & Atlantic's Shirk 1, spudding. Johnson-McCamey et al's Union 1, rig. Marland Oil Co.'s Powell 1, spudding; Reese 1, rig; Shirley 1, rig; University 1, lcn. Pure Oil Co.'s Shirk 1, lcn. Sartain Bros. & Davis' Mrs. Bull 1, sd on top salt 1660 ft. Skelly Oil Co.'s O. P. Jones 1, elevation 2882 ft, top salt 1761 ft, dr with hole full water 3490-95 ft. Texon Oil & Land Co.'s Shirk 1, rig. Texon & Marland's Halff 1, elevation 2784 ft, top salt 1440 ft, dr 2655 ft. Wentz Oil Corp. et al's Shirk 1, co after shutting off water 2272-2331 ft.

VAL VERDE COUNTY—A. Blume et al's Moore 1, re-set cas 2675 ft. O. O. Owens et al's Mills 1, rig. Hiawatha Oil Co.'s Sellars 1, spd and sd. Independent Operators' Whitehead 1, sd 3750 ft. Plateaus Oil Co.'s Harrison 1, dry 3507 ft. Transcontinental Oil Co.'s Stevenson 1, dr 2105 ft. E. T. Williams et al's W. T. Holman 1, dr 280 ft.

WINKLER COUNTY — McCullough Oil Co.'s Tobe Morton 1, dk. Ed. S. Hill & Ladd-

Simon's Ambrugey 1, fsh 700 ft. Champlin Drilling Co.'s Means 1, lcn. R. S. Matthews et al's Cowden 1, fsh 565 ft. Llano Oil Co.'s Scarborough 1, lcn. R. A. Westbrook & Co.'s T. G. Hendricks 1, sd with 300 ft heavy oil in hole 2874 ft. F. P. Zoch et al's John Sealy 1-A, spd second hole.

East Central Texas Wildcats

COMPLETIONS

Cherokee County—
Humphreys Corp.'s Bowling 1 ..... † 3900

Limestone County—
Pure Oil Co.'s D. Oliver 1 ..... * 1689

Milam County—
Alexander-Lyles et al's Batte 1 .... * 3137

DRILLING REPORT

BELL COUNTY—Bob Penn et al's Hary-Peck 2, chalk at 663-1143 ft, dr 2460 ft.

FREESTONE COUNTY — J. S. Cosden et al's J. E. Woods 1, rig. Orbit Oil Co.'s Coleman 1, rig.

HENDERSON COUNTY—Barkley-Meadows et al's Wm. McClung 1, rig.

LIMESTONE COUNTY—W. K. Clayton et al's Joe Clayton 1, lcn. Evangeline Oil Co.'s Swaett-Bass 1, dr 3395 ft. Harrison & Pandem Oil Corp.'s Bassett 1, top Midway formation 460 ft, dr 510 ft. Humble O. & R. Co.'s Guntre 1, dr 3115 ft. Killiam & Phillips' O. Montgomery 1, coring sand and shale 3205 ft. Kosse Synd.'s Fenner 1, sd 2905 ft; Jones 1, rig. E. L. Smith Oil Co. et al's Jake Steubenrauck 1, rig. Oxford Oil Co.'s Riddle 1, near Nigger Creek field, sidetracking, td 2680 ft.

McLENNAN COUNTY—D. H. Byrd et al's Bruce Duncan 1, rig. Pecan Gap Co.'s Punchard 1, dr 2080 ft. Castleman Creek Oil Co.'s Schaephaur 1, dr 1250 ft.

MILAM COUNTY—The Texas Co.'s M. M. Kuykendall 2, lcn.

NAVARRO COUNTY — Carrita O. & G. Co.'s Trammel 1, rig. J. S. Cosden et al's J. H. Finch 1, dr 1915 ft. John W. Hooser's J. H. Finch 1, lcn. Lea et al's Kerr 1, dr 1985 ft. Bob Penn et al's Harrison 1, Bazette district, elevation 365 ft, Austin chalk at 2288-2519 ft, coring 2906 ft. McNeill et al's Pierce 1, dr 3155 ft. Sun Oil Co.'s H. A. Swink 3-A, dr 3710 ft. The Texas Co.'s Byron Cheney 1, dr 1400 ft.

Coastal Wildcats

COMPLETIONS

Liberty County—
Gulf Prod. Co.'s Beckman 1 .....1200 3752
Humble O. & R. Co.'s Welder 4 .1800 3555

Fort Bend County—
Gulf Prod. Co.'s Davis 15 ..... * 3490

DRILLING REPORT

AUSTIN COUNTY—Valley Oil Co.'s Reese 1, 30 miles N of Orchard, sd 1010 ft.

BRAZORIA COUNTY—Roxana Pet. Corp.'s Pabst 1-A, Clemens dome, dr 1639 ft in rock; Clemens Bernard River 1, Clemens dome, lcn; Clemens 3, Clemens dome, dr 2914 ft in blue sand; Allen Bernard River 1, Allen dome, dr 1779 ft in gumbo; Allen 3, Allen dome, dr 3323 ft in shale. The Texas Co.'s Mayes 1, Rattlesnake Mound, rigging up.

CHAMBERS COUNTY — Patillo Higgins' Fee 1, SE Barbers Hill dome, cementing setting 903 ft. Osage Oil Co.'s State 1, Lake Charlotte, dr 3640 ft in gumbo.

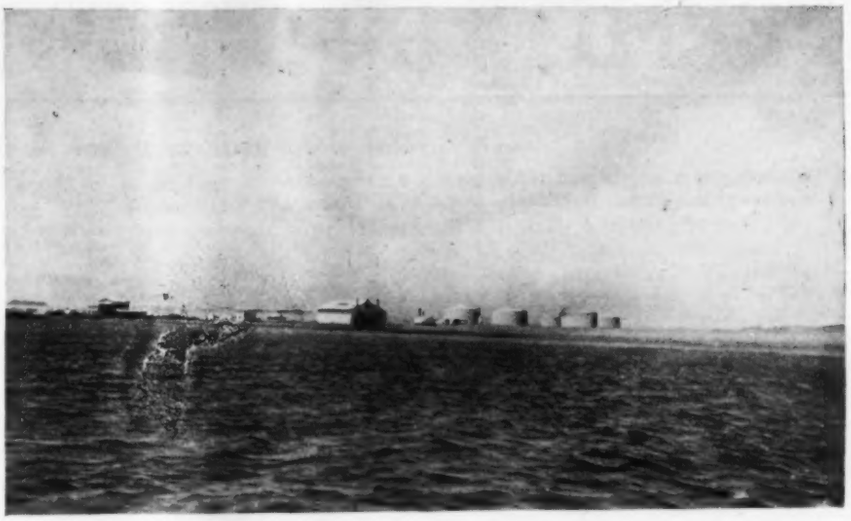
FORT BEND COUNTY—Gulf Prod. Co.'s Davis 15, Long Point, abn 3490 ft in salt. The Texas Co.'s Farmer 1, Boling, dr 4391 ft in gumbo and lime. Sun Co.'s Farmer 1, Boling, fsh 1988 ft.

GOLIAD COUNTY — Houston Oil Co.'s Park 2, Goliad, dk; Pettus 2, Goliad, dr 3120 ft.

HARRIS COUNTY — Redondo Dev. Co.'s John Lenze 1, Tom Ball, dk. Mike Katter's Crews 1, 5 miles W of Humble, sd 2265 ft.

JACKSON COUNTY—L. E. Norton's Fenner 1, C. O. Fenner 676-acre tract, sd 3012 ft.

JEFFERSON COUNTY — Gulf Prod. Co.'s Bordages 2, Fannette, dr 4310 ft in sand, no show; Thomas 9, Fannette, repairing rig 3704 ft. Port Arthur Development Co.'s West 4, Westburg, tested sw 1846 ft, bailer hung in liner, fsh. New Beaumont Oil Co.'s Garrick 1, Beaumont, cored sand 2630 ft. T. D. Brooks' Young 1, 5 miles S of Spindletop, dr 1930 ft in gumbo.



A tank farm at the shipping point four miles north of Hurghada field in Egypt

LIBERTY COUNTY — Humble O. & R. Co.'s Welder 3, Liberty extension, running tubing after failing to flow 3782 ft; Welder 4, Liberty extension, completed 1800 bbls 3555 ft, 23 gravity and decreased to 800 bbls in two days. Gulf Prod. Co.'s Beckman 1, Liberty extension, completed 1200 bbls 21 gravity, 3752 ft. Sun Co.'s Chambers 1, Moss Bluff, dr 1812 ft in rock

MATAGORDA COUNTY—Gulf Prod. Co.'s Parkinson 1, Hawkinsville, dr 4540 ft in sandy shale.

WHARTON COUNTY — Rich-Humphreys' Malone 1, 5 miles W of Wharton, dr 1910 ft in shale.

CAMERON PARISH — Humble-Sun Co.'s Peterson 1, Johnson's Bayou, dr 4650 ft in gumbo.

San Antonio Wildcats

BEXAR COUNTY—B. F. Thompson' Wietes 1, dr in hard chalk at 1285 ft.

CALDWELL COUNTY—Bristol Oil & Gas Co.'s Demon 1, dr. United North & South Oil Co.'s Kelly 1, dr; Tiller 1, dr.

DUVAL COUNTY — Associated Oil Co.'s Suthe land 1, dr; Benavides 1, dr. Barkley-Meadows-Morgan's King Harper 3, dr. Buffum et al's blk 38, Mesquite ranch, dr; Benavides 1, preparing to dr. Gulf Prod. Co.'s Tinney 1, sur 8, dr. Humble Oil Co.'s Dowdy 1, dr 3647 ft in sticky shale; Schallert 7, dr; Walsh 7, ru; Becker 1, sur 531, set cas 3118 ft, preparing to test; Singer 10, reported abn and plugged; Singer 11, dr. O. W. Killam's Lopez 3, sec 6, blk 9, lcn; Lopez 4, 5 and 6, blk 18, sec 319, lcn. Magnolia Pet. Co.'s Spear 1, dr. Maurer & Duggan's Hoffman 1, dr; Cuellar 3, plugging.. O'Hern & Seacord's No. 3, sur 174, set cas; No. 2, dr at 1950 ft. Simms Oil Co.'s Schallert 1, sec 241, plugging; Dinn 2, plugging. Texas Co.'s No. 1, sur 668, set cas at 2520 ft.

GAUDALUPE COUNTY — J. M. Davis' Payne, Bond, Shaw 1, dr; Rosenbrook 1, dr. Texas Co.'s Glenwinkle test, dr. Wildman & Blackwell's Smith 1, dr.

MEDINA COUNTY—Armstrong's Lacey 1, dr. Arnett Oil Co.'s Nixon 4, preparing to test. California-Medina Co.'s Rothe 1, dr. Golden West Oil Co.'s Courand 1, dr; Adams 1, gas show at 726 ft. Ina Oil Co.'s Finger 1, dr below 960 ft. Kittle & Townley's Bendle 1, dr. Rand et al's No. 1, dr. Western Gas & Fuel Co.'s Admas 1, dr. Walsh et al's Saathoff 1, dr. Yeager et al's No. 1, dr.

STARR COUNTY — Deckle & McCarley's Garcia 1, spudded in. L. Pearson et al's Pefley 1, dr. Southern Exploration Co.'s Fee 1, dr.

ZAPATA COUNTY — Killam's No. 1, sur 307, dr. Maurer & Duggan's sur 123 of Cuellar, plugged at 1414 ft. Magnolia Pet. Co.'s Cuellar 2, dr. Malone & Burns' Bissonet 1, moving on tools. Trees Oil Co.'s Benavides 1, sd. Texas Co.'s Jennings 3, coring at 4020 ft. W. R. Duke's (Evangeline Oil Co.) No. 1, in the Charco Rendendo, preparing to spud in.

Call Hearing on Shale Location Claims

Washington, D. C.—The requirements to be met by oil shale placer locaters seeking patents under the general leasing act of 1920 will be discussed at a hearing to be held by the Secretary of the Interior December 1, it has been announced.

The 1920 leasing law provided that thereafter oil shale and certain other mineral deposits should be subject to disposition only in the form and manner provided by the act "except as to valid claims existent at the date of the passage of this act, and thereafter maintained in compliance with the laws under which initiated, which claims may be perfected under such laws, including discovery."

The records of the Interior Department show that prior to the enactment of the law numerous locations under the placer mining laws had been made upon alleged oil shale deposits, particularly in the States of Colorado, Utah and Wyoming. Some applications for patent are pending before the department, and numerous other oil shale claims are under investigation in the field. These cases involve not only a determination of the facts pertinent to each case, but determination under the law as to what constitutes a sufficient discovery to support the claim of an oil shale placer locator who is seeking or intends to seek patent under the general mining law. In order to settle definitely what shall constitute discovery, the secretary has called the hearing, at which all persons interested may appear and present their views.

PERMITS GRANTED FOR NEW WELLS

Weekly Comparison of New Wells

Following is a condensed table giving a comparison of permits or locations made for new wells during the past year in Kansas, Oklahoma, Arkansas, Louisiana, Texas and California:

	Mar. 1925	Apr. 1926	May 1926	June 1926	July 1925	Aug. 1925	Sept. 1926	Oct. 1	Oct. 8	Oct. 15	Oct. 22
Arkansas	105	124	103	100	107	65	62	6	15	12	10
California	116	135	79	69	80	103	106	7	30	34	30
Louisiana	145	150	109	107	141	93	113	25	13	24	30
Kansas	160	170	156	161	143	119	124	53	31	16	22
Oklahoma	419	593	471	411	522	396	398	82	63	88	98
Texas	817	1070	941	1168	1468	1073	1021	322	276	207	291
Mountain States	...	...	113	124	108	105	101	30	24	8	11
Total	1763	2242	1972	2149	2569	1955	1905	525	452	389	492

CALIFORNIA

Alameda County—Talbott Oil Co.'s No. 1, 15-3-3.

Huntington Beach—Standard Oil Co.'s Huntington H-13, 10-6-11; Fee 1, 10-6-11. California Pet. Corp.'s Talbert 1, 10-6-11. J. Paul Getty's Huntington Beach 1, 10-6-11; Huntington Beach 2, 10-6-11. Guaranty Oil Co.'s Guaranty 1, 10-6-11. Ring Pet. Co.'s Guaranty 6, 10-6-11. Standard Oil Co.'s Huntington H-16, 10-6-11. Superior Oil Co.'s Gillette 6, 10-6-11; Jones 2, 10-6-11.

Kern River—General Pet. Corp.'s No. 24, 14-28-27.

Long Beach—B. & H. Oil Co.'s No. 2, 19-4-12.

Midway—Standard Oil Co.'s No. 22, 7-32-24. No. 35, 17-32-24. A. T. Jergins Trust's 13, 15-31-22. Gore Oil Co.'s A-6, 21-31-22; B-14, 21-31-22; C-10, 21-31-22; C-13, 21-31-22; C-14, 21-31-22; C-15, 21-31-22.

Mt. Poso—California Pet. Corp.'s Glide 1, 1527-28. Midland Oilfields Co., Ltd.'s McNeil 1, 34-26-27.

Piru—Continental Oil Co.'s Burnham 1, 22-5-18.

Richfield—General Pet. Corp.'s Stern 9, 28-3-9.

Seal Beach—Standard Oil Co.'s San Gabriel 1, 3-5-12.

South Mountain—Oak Ridge Oil Co.'s Willard 20, 18-3-20.

Torrance—C. C. M. O. Co.'s Del Amo 91, 8-4-14.

Tulare—Wm. C. Resser's Zimmerman 1, 14-24-27.

Whittier—Supreme Pet. Corp.'s Simmons 1, 16-2-11.

MOUNTAIN STATES

WYOMING

Utah Oil Refining Co.'s No. 4, 2-26-90.

COLORADO

Texas Production Co.'s No. 1, SW¼ 5-6-86; No. 1-T, 6-6-86.

NEW MEXICO

Continental Oil Co. No. 21, 2-29-11. J. I. Harvey's No. 1, SW¼ 15-30-16.

MONTANA

Sunburst Oil & Refining Co. No. 1, 15-32-1w. California Co.'s No. 7, SE¼ 22-35-2. Carter Oil Co.'s No. 1-M, SE¼ 21-32-2w; No. 11, SW¼ 7-33-31w; No. 1B, NE¼ 27-34-2w; No. 1K, NE¼ 17-32-2.

KANSAS

Butler County—Empire Gas & Fuel Company No. 13 Starkey, center of the northeast of the southeast of 35-27-4; No. 6 Collins, northwest corner of the northeast of the northeast of 2-28-4.

Cowley County—Twin State Oil Company No. 1 Ross, southwest corner of the southeast of the southeast of 21-21-4. Milligan et al No. 3 Elrode, northwest corner of the southwest of teh southeast of 6-32-5.

Greenwood County—Syndicate Oil Company No. 5 Bradfield, northwest corner of the southeast of the southeast of 2-22-10. Empire Gas & Fuel Company No. 8 Duby, northeast corner of the southwest of 14-22-11. Skelly Oil Company No. 17 Wick, southwest corner of the northwest of the northwest of 27-22-11. Fisher, Lauck et al No. 1 Hale, northeast corner of the southeast of the northeast of 12-23-10; No. 1 Piatta, southwest corner of the northwest of 13-23-10. Mathews et al No. 1 Martin, southwest corner of the southeast of 8-23-12. Tidal Oil Company No. 11 Shadel, northwest corner of the southwest of the northwest of the southeast of 15-23-13. Empire Gas & Fuel Company No. 1 Dugan, southeast corner of 18-24-11. Galbrath, Polhamus et al No. 1 Freeman, southeast corner of the southwest of the northwest of 19-24-11. Manhattan Oil Corporation and Phillips Pet. Co., No. 5 Freeman, northeast corner of 19-24-11. Roth & Faurot No. 1 Welch "B", southwest corner of the northeast of 12-25-8. Polhamus et al No. 1 Town Lot, southwest corner of 34-25-10.

Lyon County—Jackson & Wise No. 1 Bradfield, northeast corner of the southeast of the northwest of 25-21-10. Sinclair Oil & Gas Co., No. 1 Jones, northwest corner of the southwest of 28-21-10. Transcontinental Oil Company No. 11, "A" Atyeo, northeast corner of the southwest of the northwest of 31-21-10.

Sumner County — Mid-Continent Petroleum Corp. et al, No. 100 Riner, center of the northwest of the northwest of 36-30-2w. Roxana Pet. Corp., No. 2 Miller, southeast corner of the northeast of the southwest of 17-32-2. Twin State Oil Company No. 2 Hartzell, southwest corner of the northwest of the southeast of 17-32-2.

OKLAHOMA

Caddo County—Gorton Trust Co., No. 2 Machand, northwest of the southwest of the northwest of 2-5n-9w. Magnolia Petroleum Company No. 7 Pawkune, center of the south line of the southwest of ahe northeast of the northeast of 10-5n-9w. Diamond Core Drilling Company No. 2 Royce, southwest corner of the northeast of 12-5n-9w.

Carter County—Magnolia Petroleum Company No. 5 J. J. Hardin, old well deepened, northeast corner of the northwest of 19-1s-3w. Humble Oil & Ref. Company No. 4 Bumpass, southwest corner of the southeast of the southeast of 33-1s-3w. Magnolia No. 1 Peck, southwest corner of 17-1s-3w. Carter Oil Company No. 3 Pierce, northwest of the southwest of the southwest of 8-2s-2w.

Creek County—Wilcox Oil & Gas Company No. 8 Miles, old well deepened, northwest corner of the southeast of the northwest of 2-15-8. Bu-Vi-Bar Petroleum Company No. 4 S. Narchubby, northwest corner of 26-15-8. Sand Springs Home No. 27 Atkins, center of the south line of the northwest of the northwest of 4-18-7. Riverside Oil Company No. 3 Riverbed, northeast of the southwest of the southwest of 5-18-7. Magnolia Pet. Company No. 1 H. Tiger, old well deepened, northwest corner of the southeast of 17-17-7. Bu-Vi-Bar Pet. Co., No. 1 Woodward, southwest corner of the northeast of 9-18-10. Gypsy Oil Company No. 5 Land, northwest corner of the southwest of the southeast of the northwest of 1-18-11. Gypsy No. 8 Land, center of the south line of the north half of the southeast of the northwest of 1-18-11; No. 18 Richards, southwest corner of the southeast of the northeast of the northwest of 1-18-11. Riverland Oil Company No. 5 Land, northeast corner of the southeast of the southwest of the northwest of 1-18-11. Sunray Oil Corp., No. 10 Sango, northeast corner of the southeast of the northwest of 6-18-12. J. R. Cole et al No. 1 Strip, northeast corner of the southwest of the southeast of the southeast of 13-17-10. Cumberland et al No. 1 Tiger, southeast corner of 13-17-10. Ellison et al No. 1 Owen, southeast corner of the northwest of the southwest of 15-17-10. Hiram Oil & Gas Co., No. 4 Bucktrot, center of the west line of the northeast of the northwest of 35-17-10. Gray Oil Company No. 1 Fleming, northwest corner of the southwest of the northeast of 3-14-10. Johnson & Ashe No. 1 R. Tiger, old well deepened, southeast corner of the southwest of 9-14-10. R. D. Donnelly et al No. 2 Scott, southwest corner of the northwest of the southeast of 20-14-10. Henry & Murphy No. 1 Fee, southeast corner of the southwest of the northwest of 32-14-10. T. B. Slick No. 3 Jones, southwest corner of the northwest of the southeast of 32-14-10.

Garfield County—Sinclair Oil & Gas Company No. 26 Walker (North), old well deepened, northwest of the southwest of the northeast of 13-22-4w; No. 27 Denker, southwest corner of the northeast of the southwest of the southwest of 13-22-4w.

Grady County—Magnolia Pet. Co., No. 3 Smith, northwest of the southeast of the northeast of 11-4n-8w; No. 3 J. M. Pendley, center of the north line of the south half of the southeast of the notrhwest of 14-4n-8w.

Hughes County—W. R. Ramsey No. 3 Jacobs, southeast of the northwest of the northeast of 14-7-8.

Kay County—Comar Oil Company No. 7-W Duncan, northeast corner of the northwest of the southwest of 21-29-1w; No. 14-W Duncan, southwest corner of the northwest of the southwest of 21-29-1w. Wentz Oil Corporation No. 2 Andrews, northwest corner of the northeast of the northwest of the northeast of 8-28-1w. Marland Oil Company No. 6 Thomas, old well deepened, southeast corner of the northwest of the southwest of 15-25-2w.

Lincoln County—Phillips Pet. Co., No. 2 Varner, southwest corner of the northwest of the southeast of 8-15-6.

Muskogee County—E. Price No. 4 R. Morris, southwest corner of the northwest of 29-15-15, twin.

Noble County—K-D Oil Company No. 4 White, center of the north line of the southeast of 1-22-2w.

Okfuskee County — Gibson-Zahniser No. 1 Tiger, southwest corner of the northeast of 4-19-0. Barnsdall Oil Corp., No. 1 Gilbert, northwest of the southwest of the southeast of 15-10-9. Morgan, Flynn and Roxana No. 2 Lockhart, northwest corner of the northeast of the northwest of 19-10-11. E. L. Robinson No. 1 West, northwest corner of 11-12-11. Amerada

Pet. Corp., No. 16 Harjo, northeast corner of the northwest of the northwest of 13-12-11.

Okmulgee County—C. E. Campbell et al No. 3 Blair, center of the northwest of the southwest of 34-15-12. J. H. Rebold No. 2 Roberts, northwest corner of the southwest of 28-13-11. The Texas Company No. 2 Jones, old well deepened, southwest corner of the northwest of the 28-13-11. Josey Oil Company No. 17 McCoy, center of the south line of the southwest of the northwest of 33-13-11. McCulloch Oil Company No. 3 T. J. McKinney, southeast corner of the northwest of the southeast of 16-15-14.

Osage County — Phillips Pet. Co., No. 1, southwest corner of the southeast of 1-27-5; No. 1, southwest corner of the northwest of 7-27-6; No. 2, southeast corner of the southwest of the northwest of 7-27-6; No. 3, southwest corner of the southeast of the northwest of 7-237-6; No. 4, southeast corner of the northwest of 7-27-6; No. 6, northeast corner of the southwest of the northwest of 7-27-6; No. 9, southwest corner of the northwest of the northwest of 7-27-6; No. 9, southwest corner of the northwest of the southeast of 7-27-6. Kewanee Oil & Gas Company No. 2, northeast corner of the southeast of the northwest of 34-27-6; No. 2, northwest corner of the northeast of the southwest of 34-27-6; No. 1, northwest corner of the southeast of 34-27-6. Delmar Oil Company No. 1, northwest corner of the southeast of 23-27-11. Skelly Oil Company No. 1, northwest corner of 28-26-6; No. 2, northeast corner of the northwest of the northwest of 28-26-6; No. 3, northwest corner of the northeast of the northwest of 28-26-6; No. 4, northeast corner of the northwest of 28-26-6; No. 5, southeast corner of the northeast of the northwest of 28-26-6; No. 6, northeast corner of the southeast of the northwes tof 28-26-6; No. 7, southeast corner of the northwest of 28-26-6. The Texas Company No. 1, northwest corner of the northeast of 28-26-6; No. 2, southwest corner of the northwest of the northeast of 28-26-6; No. 3, northwest corner o fthe southwest of the northeast of 28-26-6; No. 4, southwest corner of the northeast of 28-26-6. Phillips Petroleum Company No. 16, northeast corner of 29-26-6. A. G. Oliphant et al No. 1, northeast corner of the southwest of 31-25-8. Peters Pet. Company No. 1 et al, northeast corner of the northwest of 26-25-9. Indian Territory Illuminating Oil Company No. 349, northeast corner of the northwest of the southeast of 31-25-9. Plymouth Pet. Co.; No. 3, southwest corner of the northwest of the southwest of 31-25-12. Barnsdall Oil Corp., No. 18, northwest corner of the southeast of 5-20-12.

Pawnee County—Turner et al No. 1 Loranz, southwest corner of the northwest of the northwest of 20-20-7.

Seminole County—Carter Oil Company No. 3 F. Knapp, northwest corner of the southwest of the southwest of 13-9-6; No. 3 G. F. Killing, northwest of the southwest of the southeast of 14-9-6. Mid-Continent Pet. Corp., No. 3 Rentie, southwest of the southeast of the southeast of 14-9-6; No. 4 Rentie, northeast of the southeast o fthe southeast of 14-9-6; No. 5 Rentie, northeast of the southwest of the southeast of 14-9-6. Carter Oil Company No. 6 Grisso, northwest of the northeast of the southeast of 23-9-6. Mid-Continent Pet. Corp., No. 1 Tayoche, northeast of the southeast of the southwest of 24-9-6, old well deepend. Barnsdall Oil Corp., No. 1 Cudjo, southeast corner of the northwest of 31-9-6. Independent Oil & Gas Company No. 3 Cobb & Hill, southwest of the southeast of the northeast of 7-9-8; No. 1 T. Cobb, southwest of the northeast of the northeast of 7-9-8. Independent & Amerada No. 1, Jefferson, southeast of the southwest of the northeast of 7-9-8. Indian Territory Illuminating Oil Co., No. 3 Goforth, northwest of the southwest of the northeast of 15-8-6. M. F. Breene et al No. 1 L. Burden, northwest of the southwest of the southwest of 23-8-6.

Stephens County—Carter Oil Company No. 3 Goza, northeast corner of the southwest of the northeast of 2-2n-5w, correction. Pace et al No. 2 Morrey, southwest corner of the southeast of the northwest of 12-2s-8w.

Tulsa County—T. Green et al No. 2 Coll, southwest corner of the northeast of the southwest of 34-17-13. Savoy Oil Company No. 3 Jones, center of the east line of the southeast of the northwest of 7-16-14. Davis & Wallace No. 1 Perryman, northwest corner of 6-19-10. Minshall et al No. 2 Fife, old well deepened, southwest corner of the southeast of the southwest of 15-19-11.

Wagoner County—A. E. Carder No. 2 R. Woodward, center of the north half of the southeast of 31-18-16.

ARKANSAS

Columbia County—Magnolia Pet. Co.'s Sawyer 1, 1-16-20, 330 ft S and W of NEc SE¼ NE¼.

Ouachita County—Magnolia Pet. Co.'s Gosden 1, 15-15-19, 150 ft N and W of SEc SW¼.

Union County—C. H. Allison's Howard 1, 8-19-13, NEc NE¼ SW¼. Gladys Belle Oil Co.'s Cook 10, 16-16-15, NWc SE¼ NE¼. Magnolia Pet. Co.'s Hulsey 7, 20-17-16, SWc NW¼ NE¼; Hulsey 8, 20-17-16, SEc NW¼ NE¼. Rovenger Oil Corp.'s Dumas 10, 9-17-16, center of north line SE¼ SW¼. Standard Oil Co.'s Hardy Murphy 38, 4-16-15, 670 ft N and 190 ft E of SWc of section. Unity Pet. Co.'s Sydnor 5, 21-17-16, SWc NW¼ SE¼; Sydnor 6, 21-17-16, NWc SW¼ SE¼.

LOUISIANA

Acadia Parish—Ratliff Oil Co., P. O. Box 840, Lake Charles, Arnoudet 10, 47-9s-2w, 150 ft S and 50 ft E of NW corner of section.

Caddo Parish—Gulf Ref. Co. of La., P. O. Box 1731, Shreveport, F. E. Wemple et al 1, 14-20n-15w, 200 ft S and 200 ft E of NW corner of NE¼ of SW¼; F. E. Wemple et al 2, 14-20n-15w, 200 ft N and 200 ft E of SW corner of NE¼ of SW¼. Magnolia Pet. Co., Slattery Bldg., Shreveport, J. R. Wemple 2, 14-20n-15w, 200 ft S and 200 ft W of NE corner of SE¼ of NW¼; J. R. Wemple 3, 14-20n-15w, 200 ft N and 200 ft W of SE corner of SW¼ of of NW¼; J. R. Wemple 3, 14-20n-15w, 200 ft and 200 ft E of SW corner of SE¼ of NW¼. The Ohio Oil Co., P. O. Box 1129, Shreveport, E. K. Smith 23, 7-21n-14w, 1560 ft S and 92 ft E of NW corner of SW¼. The Texas Co., Ricou-Brewster Bldg., Shreveport, Curtis 2, 14-20n-15w, 200 ft S and 200 ft W of NE corner of NW¼ of SW¼; Curtis 3, 14-20n-15w, 200 ft N and 200 tf W of SE corner of NW¼ of SW¼; Curtis 4, 14-20n-15w, 200 ft N and 200 ft E of SW corner of NW¼ of SW¼.

Caldwell Parish—Spencer & Rhodes, P. O. Box 126, Urania, J. W. Meredith et al 1, 38-13n-4e, 1082 ft along west line and 1280 ft southeasterly parallel to north line of section 83.

Cameron Parish—Yount-Lee Oil Co., Beaumont, Texas, School 6, 16-12s-10w, 1262 ft N and 1417 ft E of SW corner of section; State Land 3, 20-12s-10w, 478 ft E and 980 ft N of SW corner of NW¼ of NW¼.

Claiborne Parish—Triangle Drilling Co., 301 Ardis Bldg., Shreveport, Caskey 1, 7-19n-5w, 330 ft S and 330 ft W of NE corner of section.

La Salle Parish—O. W. Clark, P. O. Box 15, Tullos, Miles 3, 25-10n-1e, 200 ft N and 350 ft E of SW corner of NW¼ of NW¼; L. Tullos 6, 23-10n-1e, 350 ft N and 200 ft W of SE corner of SE¼ of SW¼. E. Dawson, Tr., Olla, Urania Lumber Company 1, 6-10n-2e, 200 ft N and 200 ft E of SW corner of SE¼. Humble Oil & Ref. Co., Houston, Texas, La. Central Lbr. Co. 3-A, 25-11n-2e, 300 ft N and 300 ft E of SW corner of NW¼. H. L. Hunt, Inc., El Dorado, Ark., State of La. 5, 26-10n-1e, 924 ft S and 873 ft E of NW corner of NW¼ of NE¼; Urania Lbr. Co. 2, 2-9n-1e, 200 ft S and 200 ft E of NW corner of NE¼ of SW¼. Hunt, McCurry & Zoder, P. O. Box 182, Urania, Urania Lbr. Co. 6, 7-10n-2e, 150 ft W of center of E line of SW¼ of SE¼. Shreveport Oil Corp., Camden, Ark., Pendarvis 4, 26-10n-1e, 827 ft W and 85 ft N of SE corner of SW¼ of SE¼. C. S. Thomas, Olla, J. S. Winberry 1, 18-10n-2e, 140 ft N and 240 ft E of SW corner of NE¼ of NW¼.

Natchitoches Parish—The Ohio Oil Co., Giddens-Lane Bldg., Shreveport, L. & A. Oil Co. 1, 23-13n-6w, 330 ft S and 330 ft E of NW corner of SW¼ of SE¼. Three League Oil Co., 613 City Bank Bldg., Shreveport, Long Bros. 1, 34-10n-7w, 290 ft S and 590 ft E of NW corner of SE¼ of SW¼.

Ouachita Parish—The Palmer Corp., 1100 City Bank Bldg., Shreveport, Millsap 3, 36-20n-4e, 660 ft N and 1872 ft E of SW corner of SW¼ of SE¼. Pioneer Gas Company, Monroe, Jones 1, 17-18n-4e, 646 ft N and 2561 ft E of southerly corner of section 12 in section 17.

Red River Parish—The Texas Co., Ricou-Brewster Bldg., Shreveport, Marston 1, 16-14n-11w, 1120 ft E and 200 ft N of SW corner of NW¼.

Union Parish—The Ohio Oil Co., Giddens-Lane Bldg., Shreveport, F. Hendricks et al 1, 30-19n-1e, 330 ft N and 330 ft E of SW corner of NW¼ of SW¼.

Webster Parish—J. R. Garrison, Princton, A. L. Hudson 1, 17-19n-10w, 450 ft N and 150 ft E of SW corner of SE¼ of SW¼.

TEXAS

Archer County—Simms Oil Co., Dallas, Turbeville A12, B 172, R. Carson sur, 150 ft to N and E lines; A11, 300 ft W of No. 10; A10, 300 ft N of No. 9. Murchison & Fain Oil Co., Wichita Falls, W. J. Logan 7, A. Arms sur, 300 ft SE of No. 6; 6, 300 ft NE of No. 5. Marland Oil Co. of Texas, Ft. Worth, Turbeville 10, S 172, R. Carson sur, 300 ft W of No. 9; A. J. White 3, B 111, Harris sur, 600 ft W of No. 2. Petroleum Prod. Co., Wichita Falls, Turbeville 6A, B 171, R. Carson sur, 398 ft N of No. 3; A4, 33 7ft E of No. 3. Kentucky Oil Corp., Wichita Falls, Turbeville B1, J. W. Harris sur, 150 ft to N and 450 ft to E line; W. T. Fox 1, NE corner Club Ranch, 150 ft to E and S lines. Continental Oil Co. of Texas, Wichita Falls, Hamilton 18, B 22, DCSL sur, 1350 ft to E and 556 ft to E line; M .B. Ray 1, B 2½ and 3 M. B. Ray sur, 150 ft to S and 271 ft to E line. Tidal Oil Co., Ft. Worth, Turbeville 2, S 172, R. Carson sur, 150 ft to N and E lines; N. Henderson 1, B 4, ATNC sur, 150 ft to N and 1052 ft to W line. W. C. Young, 554 H. & S. Bldg., Wichita Falls, W. P. Ferguson 1, S 1, B 3, 150 ft to N and E lines. Burton Drilling Co., Wichita Falls, M. B. Ray 1, S 2 and 3, lot 7, Harris Sub., 271 ft to W and 3359 ft to S line. L. T. Burns, Wichita Falls, Turbeville 3A, B 171, R. Carson sub, 150 ft S and 210 ft W of NE corner. Burleson & Chenault, Wichita Falls, J. Prescher 1, S 56, B 3, 150 ft to N and W lines. American Ref. Co., Inc., Wichita Falls, Turbeville 8, B 146, R. Carson sur, 68 ft to N and 250 ft to W line. G. P. Trahan & Perkins & Cullem, Wichita Falls, E. J. Netherton 1, S 104, ATNC sur, 150 ft to N and E lines. Consolidated Oil Co., of Texas, Wichita Falls, R. C. Kinder 1, S 63, B 5, C&P sur, 150 ft to E and S lines. Jeffers & Jeffers, Wichita Falls, W. L. Andrews E1, B 26, G. C. Fraley sur, 150 ft to W and S lines. Roxana Pet. Corp., St. Louis, Mo., G. L. Abercrombie 7, S 2, SP RR sur, 150 ft to N and E lines. Continental Oil Co. of Texas, Wichita Falls, Kemp & Kempner 10, SP RR sur, B 63 and 64, 150 ft to N and 556 ft to W line. C. N. Beasley, Electra, D. L. Wolf 2, SP RR sur, 300 ft W of No. 1. Plains Prod. Co., Wichita Falls, Turbeville 5, B 171, J. Carson sur, 300 ft S of No. 3. Humble Oil & Ref. Co., Wichita Falls, G. B. Hamilton 19, S-Lot 1. I. Holman sur, 5462 ft S and 150 ft W of lines. Bridwell & Heydrick Oil Co., Wichita Falls, Abercrombie 2, S 2, SP RR sur, 745 ft to N and 150 ft to W lines. J. P. Ravzor, Box 997, Wichita Falls, L. H. Farmer 1, B 17 and 18, W. C. Winters sur, 150 ft to S and 815 ft to W lines. T. F. Hunter et al, Wichita Falls, J. Rassmasen 1, S 6, Hooper & Wade sur, 150 ft to W and 450 ft to S line. Russell & Wilson, Wichita Falls, H. O. Prideaux 2, A. Rohus sur, 150 ft to N and 100 ft to Bbl tanks. Golding & Cochran, Wichita Falls, Hooper 1, Hooper & Wade sur, 150 ft to E and S lines.

Brown County—G. A. Henshaw Jr. & Co., San Angelo, F. Lowe 2, S 622, G. Stubblefield sur, 150 ft to N and 450 ft to W line; 3, 150 ft to W and 450 ft to N line; 4, 150 ft to N and 750 ft to W line; 5, 150 ft to W and 750 ft to N line. The Texas Co., Fort Worth, W. N. Paugh 1, C. J. Pugh sur, 150 ft to N and E lines; G. B. Gaines 2, W. Miller sur, B 149, 150 ft to N and E lines; R. Hickman 6, T. Benson sur, S 783, 300 ft E of No. 5. Stout & Bradstreet, Cross Plains, W. A. Stout 2, W. B. Smith sur, 150 ft S of No. 1. W. V. Lester, Hall Street, Dallas, M. E. Fry 9, S 621, J. Chandoin sur, 150 ft to N and E lines; 10, 150 ft to S and E lines. E. R. Wilson, Cross Plains, Stone-Willis 2, ET RR sur, 150 ft to S and 450 ft to W line; 3, 150 ft to W and 450 ft to S line. Amerada Pet. Corp., Box 1004, Cisco, M. E. Fry 3, J. Chandoin sur, 330 ft N of No. 1. J. B. Douglas, F. & M. Bank Bldg., Ft. Worth, Pease 1, S 3, J. Brown sur, 150 ft to S and W lines. W. H. Hammon et al, Wichita Falls, H. J. Matthews 1, S 9, HT&B sur, 150 ft to E and 1320 ft to N line. Roy Featherstone Oil Co., Staley Bldg., Wichita Falls, W. A. Stout 2, W. B. Smith sur, 150 ft to N and W lines. Humble Oil & Ref. Co.,

Cisco, D. C. Wooldridge 6, No. 157 ET RR sur, 150 ft to E and S lines. J. S. Cosden, Inc., Ft. Worth, J. T. Arledge 2, N. B. Mitchell sur, No. 150, 150 ft to S and 2020 ft to E line. W. V. Lester, Hall St., Dallas, M. E. Fry 9, S 621, J. Chandoin sur, 160 ft to W and 1280 ft to N line. Louisiana Oil Ref. Corp., Shreveport, La., H. H. Henslee 8, P. Curlong sur, 600 ft W and 150 ft S of NE corner. E. M. Curry, Cross Cut, D. C. Wooldridge 9, ET RR sur, 300 ft S of No. 7. Price & Daniel, Brownwood, J. J. Andrews 1, C. B. Banister sur, 583 ft to N and 150 ft to E line. West & H-Y Oil Co., Box 642, Ft. Worth, J. W. Newton 19, R. Mitchell sur, 1050 ft SE of No. 18. Campbell Rosenfield & Graham, 1302 F. Bk. Bldg., W. L. Smith 1, SA&MG RR sur, 1501 ft to SE cor of Roxana. Anna Belle Oil Co., Cisco, W. H. & E. P. Kilgore 8, McClure 152 sur, 36 ft E of No. 6.

Bexar County—Tom Burnam, Converse, H. M. Wiedner 1, W. Winford sur, 450 ft to N and 150 ft to E line. G. E. Guntes, Calcasieu, G. W. Brackenridge 1, 1700 ft to N and 900 ft to W line. Marland Oil Co. of Texas, Ft. Worth, San Antonio Trust 1, B 21, J. Pickins sur, 2280 ft to E and 1528 ft to S line.

Baylor County—Pandem Oil Corp., Wichita Falls, W. H. Portwood 3-A, W. H. Loggins sur, 750 ft W and 15 ft S of NE corner of S½.

Callahan County—Prairie Oil & Gas Co., Ranger, B. B. Bond 7, J. Knight sur, 50 ft N of No. 5. Moutray Oil Co., 3rd St., Abilene, John Flores 4, S 140, BBB&C sur, 300 ft S of No. 3; 6, 300 ft N of No. 5. R. H. Techner, San Antonio, L. H. Warren 10, B 2039 TE&L sur, 160 ft W of No. 9. J. D. Meredith, Moran, O. W. Elliott 1, S 130, Univ. sur, 153 ft to N and W lines. Ell (Cowboy) Evans, Cisco, J. Cottle 5, S 2994 TE&L sur, 450 ft S of No. 2. Harold A. Burt, Baird, A. T. Young 2, S 129, BBB&C sur, 300 ft W of No. 1. Canyon Oil & Gas Co., Cross Plains, J. E. Crockett 5, CCSL sur, 150 ft to S and 750 ft E line. Western Oil Sales Corp., Cisco, I. Slaughter 2, S 9, D&D sur, 300 ft SW of No. 12. Watter Brown, Box 672, Moran, J. C. Dyer 1, S 2989 TL sur, 150 ft to E and 450 ft to S line. Brown & Co., Inc., Cisco, M. L. Long 3, W. G. Anderson sur, W of No. 2 in line with 2, 1 and 4. Sheitzer Bros., Cisco, Shackelford 15, S 2270 TE&L sur, NE corner 300 ft N of well.

Cooke County—C. C. Lanier, Dallas, A. Hyman 2, T. J. Moss sur, 150 ft to E and 450 ft to N line; 7, 350 ft W of No. 1; 6, 150 ft to N and 200 ft to W line. John W. Hooser, Dallas, J. A. Dennis 10-A, T. J. Moss sur, 300 ft N of No. 5; 9-A, 300 ft N of No. 6. W. J. Green, Wichita Falls, McCullon 1, Cromwell & Howley sur, 150 ft to S and W lines.

Coleman County—Amerada Pet.. Corp., Box 1004 Cisco, J. W. Harris 82, B 8, J Sanders' sur, 440 ft W of No. 81; 83, 440 ft N of No. 88; 84, 440 ft W of No. 76; 85, 440 ft W of No. 84; 86, 440 ft N of No. 85; 87, 440 ft N of No. 84; 88, 440 ft W of No. 44; 89, 440 ft W of No. 90; 90, 440 ft E of No. 89;; 91, 440 ft N of No. 89; 92, B 7, 440 ft W of No. 91; 93, B 4, 440 ft W of No. 61; 94, B 2, 960 ft to W and 480 ft to S line; 95, 440 ft E of No. 94; 99, B 7, 4440 ft W of No 98; 100, 100 ft W of No. 99; 101, 440 W of No. 100; 102, B 4, 440 ft W of No. 101. Archie Shaw, Burkett, W. T. Burns 18, A. Wickson sur, 2250 ft to E and 1950 ft to N line. J. B. Douglas, Fort Worth, Texas, F&M Bldg., S. E. Weaver 1, A. Gable, B 271, 150 ft to N and W lines.

Carson County—White Deer Oil Co., Amarillo, Brown-Jordan 2, S 104, B 4, I&GN sur, 330 ft to E and S lines. Great West Oil Co., Amarillo, T. D. Davis 1, S 6, B 23, BS&F 330 ft to W and S lines. Empire Gas & Fuel Co., Amarillo, Bryan 1, S 91, B 4, I&GN sur, 330 ft to N and E lines.

Crane County—Humble Oil & Ref., San Antonio, J. T. McElroy 1, S 30, B 42, T&P sur. Independent Oil & Gas Co., F&M Bldg., Fort Worth, F. Wooley 7, S 3 TGC&SF, 660 ft SE of No. 6; 6, 600 ft SE of No. 5.

Crosby County—El Capitan Oil Co., San Angelo, E. L. Robertson 1, S 5, B 9 ETRR sur, 285 ft to W and 2185 ft to S line.

Chambers County—Barkley & Meadows, Houston, Barber 3, H. Griffith sur, 150 ft E of No. 2. Mills Bennett Prod. Co., Houston, A. E. Barber 5, H. Griffith, sur, 200 ft S of No. 1.

Caldwell County—Simms Oil Co., Dallas, A. E. Masur 1, I 1, Jackson sur.

Concho County—Mullins, Davis, Davenport, San Angelo, E. L. Martin 1, S 6, J. H. Gibson sur, 1320 ft to W and S lines.

Collingsworth County—Texhoma Oil & Ref. Co., Wichita Falls, D. D. McDowell 1, S 107 B 22, H&GN, 1320 ft to W and S lines.

Duval County—Humble Oil & Ref. Co., Houston, Singer 11, G. Cumberland No. 4 sur, 550 ft S of No. 10.

Eastland County—The Texas Pacific C&O Co., Fort Worth, C .E. Allen 1, C. L. Durcher sur, 3579 ft to S and 2116 ft to E line; J. E. Butler 28, J. York, 4300 ft to N and 1800 ft to E line. W. B. Smtih, et al, Eastland, J. L. Johnson 1, S 11, B 4, H&TC sur. Gulf Prod. Co., Fort Worth, Allen-Evans 1, M. J. Robertson sur, 200 to N and 1000 ft to E line. Vaccum Oil Co., Houston, J. B. Brown 1, S 110, B 3 H&TC sur, 150 ft to S & E lines. Gates Oil Co., Ardmore, Okla., J. L. Hankins 5, A. Smelzer sur, 325 ft to W and 812 ft SE of No. 3.

Fort Bend County — Rycade Oil Corp., Houston, L. Wisdom 11, H. N. Cleveland sur, 530 ft to N and 160 ft to E line. Sinclair Oil & Gas Co., Houston, J. M. Davison 2, J. Portevent sur, 50 ft to N & W lines. Navarro Oil Co., Houston, E. R. Robinson 1, lot 8, B 23, Hicks sur, 50 ft to N and 150 ft to W line.

Fayette County—W. C. Weber, Westminster Ave., 241, Detroit, R. Rassek 1, E. Anderson sur, E of creek, close to fork.

Gonzales County—Morrow & Morrow, Fidelity Bldg., Baltimore, Mo., J. F. Elder 1, T. Davis sur, B 12 100 ft to N and 300 ft to W line. J. Bruner, Waelder, G. C. E. Vaughn 1, D. B. Kent sur, 300 ft to S & W lines.

Gray County—Skelly Oil Co., Tulsa, Okla., A. G. McKay 1, S 175, B 3, I&GN sur, 330 ft to N and W lines.

Hutchinson County—Marland Oil Co., of Texas, Fort Worth, State of Texas 2, S 22 B 47, 330 ft N & E of NW cor M. Lse No. 3095; 3, 330 ft N then 1056 ft E to SE cor No. 3073. Johnson Bros. B 1, S 69 B 46, H&TC sur, 330 ft to E & S lines; B 2, 330 ft to W & S lines. Whittenburg B 1, S 67, B 46, H&TC sur, 330 to S and E lines; B 2, 330 ft to W and S lines. J. K. Hughes Dev. Co., Mexia, W. L. Kingsland 2C, S 8, B 21, SCRR sur, 1008 ft W of No. 1; 12, Forrest & Cummings sur, 330 ft to E and 200 ft to E line; 14, 240 ft SE to inside cor. Gulf Prod. Co., Fort Worth, Whittenburg "B" 5, S 89, B z, GC&SF sur, 395 ft to S and 2310 ft to E line; Gulf-Panhandle 3, E. V. Hedgecok sur, B v, 660 ft E of No. 2. J. Riemier 1, S 29, B 47, H&TC sur, 450 ft to W and 2692 ft to N line. White Eagle Oil & Ref. Co., Amarillo, Johnson 1, M. Whitley sur, 300 ft to S and 412 ft to E line; 6, S 6, B 39, 343 ft S of No. 5; 5, 300 ft to N and 330 ft to W line. A. L. Derby, Wichita, Kansas, Johnson Bro. 5, M&C N½ SW¼, 330 ft to S & W lines; 1, S&B, S 22, B y, 330 ft to N & E lines. American Ref., Co., Wichita Falls, G. W. Deahl 4, S 19, M&C sur, 610 ft N of No. 2. W. L. Kistler, Whittenburg, H. E. Smith 6, S 14, B y, M&C sur, 660 ft E of No. 5.

Harris County—Cezeaux & Martin, Humble, Mason 1, R. Dunman sur, 75 ft to W and 300 ft to S line; No. 2, 150 ft S of NE cor. Atlas Oil Corp., Humble, W. W. Fondren 20, J. Strange sur. Navarro Oil Co., Houston, Humble O. 2, lots 16 and 18, BBB&C sur, 150 E of No. 1. Rio Bravo Oil Co., Houston, Settegast "B" 20, S B1, J. Kopman sur, 50 ft to N & W lines. M. J. Bashara, Wichita Falls, E. L. Bender 3, BBB&C sur, B 6, 8, 10, 12, 14, 150 ft to E of No. 2. Gulf Prod. Co., Houston, Rosenthal 6, Tabbs sur, 2700 ft S & 360 ft E of SE cor Soctt Ls.

Haskell County—S. S. Kourie, et al, 1302 Giddings St., Wichita Falls, T. E. Ballard 3, J. Camea sur, B 199, SW cor.

Howard County—Mag. Pet. Co., Dallas, M. Chalg 2, S 124, B 2, W&W sur, 300 ft to N and 1000 ft to E line.

Jack County—Crump & Conkling, Jacksboro, J. R. Williams 1, B 1, BS&F sur, 330 ft to N and 290 ft to W line.

Jones County—Marland Oil Co., of Texas, Fort Worth, J. C. Mason 2, S 18, B 19, 330 ft to E and 990 ft to S line.

Jim Hogg County — M. J. Bashara, Wichita Falls, J. Weil 3, sur 81 B 8, 300 ft W of No. 2; 4, 300 ft W of No. 1. American Well & Prosp. Co., Corsicana, C. Palacios 19, sur 291, B 2, 150 ft to N and 476 ft to W line; 18, B 3, 150 ft to S and 802 ft to W line. Simms Oil Co., Dallas, J. Weil 7, sur 81, B 10, 150 ft to S & W lines.

Jefferson County—Gulf Prod. Co., Houston, J. F. Weed "A" 10, J. Douthitt sur, 35 ft to N and 18 ft to W line. Oakwood R. Co. 8, J. Douhitt sur, 15 ft r.ang. to W and 221 ft NW to SW. J. Mann 6, J. Douthitt sur, 35 ft to SE and midway of No. 2 and No. 4. Refugio Oil & Gas Co., Houston, T&NO Ry. 50, J. Douhitt sur, 25 ft to W and SE of No. 1; 54, 25 ft to W and SW of No. 2. Longhorn Oil Co., Orange, M. McLean 1, J. Douhitt sur, 14 ft to W and 22 ft to S line.

Liberty County—The Texas Co., Houston, H. T. Straiti 5, M. G. White sur, 200 ft W of No. 6; 6, 260 ft NW of No. 3. Gulf Prod. Co., Houston, Phoenix Dev. 77, J. Devore sur, 250 ft W of No. 72.

Limestone County—Pure Oil Co., Mexia, D. Cogdell 1, P. Varelac sur, 150 ft to NE and SE lines. Moss & Keeling, Mexia, Rosson, A. E. 5, B 4, 125 ft NE of No. 2.

Montague County—Farlyn Oil Co., Humble Bldg., Houston, J. W. Maddox 2, G. W. Thompson sur, 397 ft S of No. 1; "B" 1, 151 ft to E and 93 ft to W line. Lord Sigler & C. N. Haskel, Nocona, C. Rolls 5, J. Chambliss sur, 400 ft N of No. 4; 4, 400 ft N of No. 3; 3, 400 ft N of No. 2. Continental Oil Co. of Texas, Wichita Falls, J. W. Maddox "A" A 5, G. W. Thompson sur, 338 ft NE of No. 4; M. H. Salman 3, W. P. Zuber sur, 150 ft to E and S lines. T. A. Norwood, Wichita Falls, Z. Cunningham 1, E. S. Singletary sur, NW¼, 150 ft to S and 200 ft to E line. Pure Oil Co., Mexia, J. W. Rowland 4, E. Votaw sur, 300 ft N of No. 2. Newblock Oil Co. of Texas, Bristow, Okla., J. W. Maddox 8, J. Chambliss sur, 1104 ft to N and 200 ft to E line 1. Humble Oil & Ref. Co., Wichita, Falls, J. W. Maddox 11, G. W. Thmopson sur, 878 ft to N, and 450 ft to E line.

Milam County—Texas Pet. Dev. Co., Box 809, Cameron, C. F. Mehaus 10, T. J. Chambers sur, 450 ft to N and 150 ft to E line. J. W. Garner 9, 500 ft to NW and 150 ft to SW line. Wahpoo Oil Co., Rockdale, J. C. Gross 12, T. J. Chambers sur, 300 ft SW of No. 11; 13, 300 ft SW of No. 12. Rockdale Oil Co., Rockdale, J. B. Kevil 1, T. S. Arnett sur, 155 ft to SW and SE lines. Wills Oil Co., Rockdale, Kevil 1, T. S. Arnett sur, 450 ft to N and 150 ft to E line. C. Mann, Minerva, Bethlehem S. Dis. 2, T. J. Chambers sur, 245 ft SW of No. 1. Minerva Pet. Co., Minerva, A. B. Watson 17, T. J. Chambers

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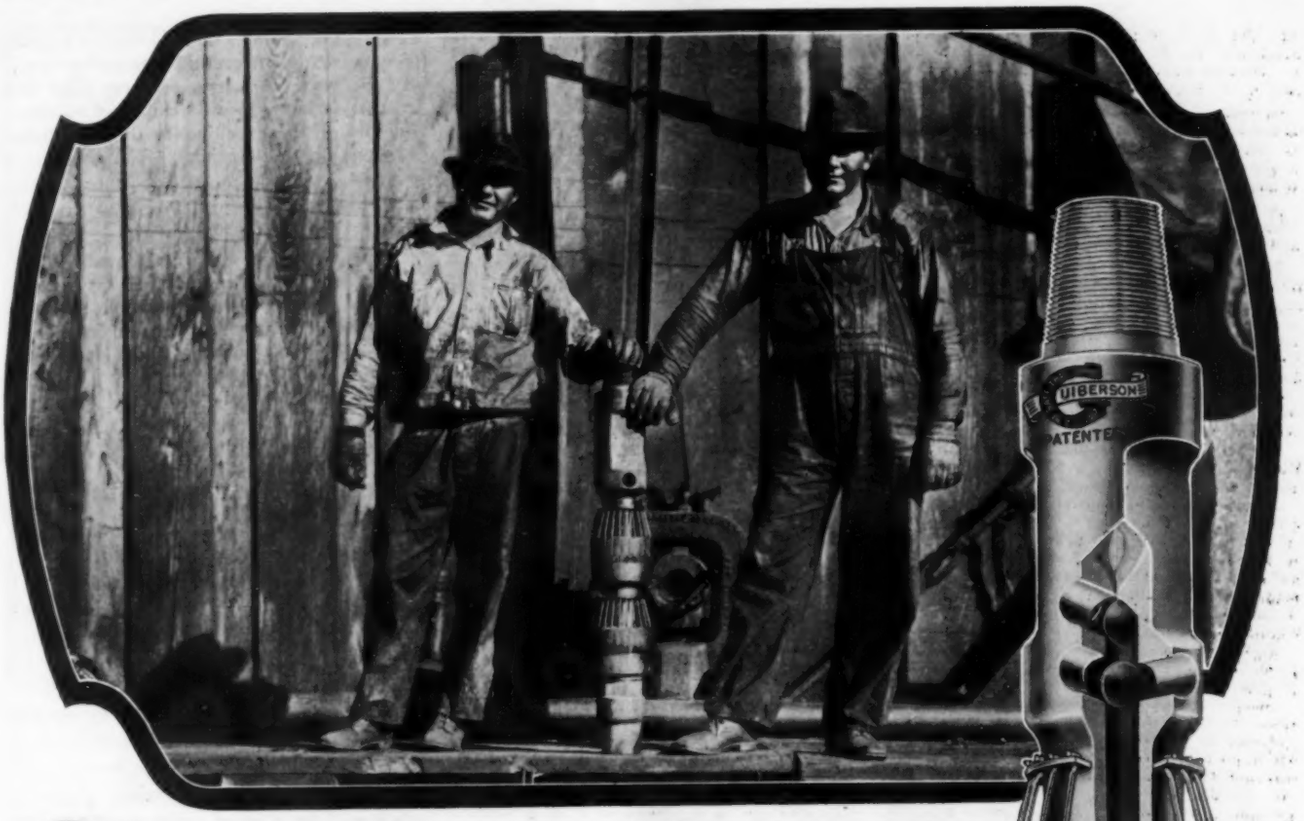

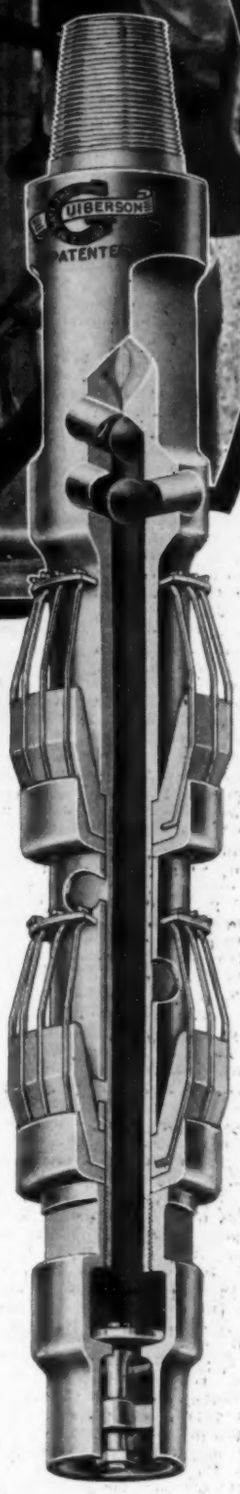

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sur, 380 ft N of No. 10. Bowman Oil Co., Rockdale, W. E. Gaither 9, 350 ft S of No. 8. Newton-Palmer Oil Co., Rockdale, A. O. Dee 4, T. S. Arnett sur, 300 ft N of No. 2.

Medina County—Henderson & Holden, El Dorado, Kan., M. M. Adams 5, E½ B 8, E. C. Durst sur, 615 ft to N and 884 to E line. Medina Oil Co., Hondo, R. Taylor 9, A. Bruchet sur, 300 ft SW of No. 8.

McMullen County—Houston Gulf Gas Co., Houston, Jacob 5, J. Rees sur, 600 ft to N and 2500 ft W line.

Navarro County—G. C. Kent, Corsicana, K. Wolens 4, J. D. Matthews & Greer sur, 190 ft to E and 115 ft to S lines; R. Hardy 7, S. F. McCandless sur, 750 to SW and 450 ft to SE line. The Texas Co., Houston, B. Cheney 1, J. White sur, 150 ft to W and 800 ft to N line.

Orange County—Gulf Prod. Co., Houston, M. Granger 3, W. Dyson sur, 200 ft S of No. 2.

Parmer County—Humble Oil & Ref. Co., Houston, Capitol Synd. 1, S 2, B a, SCSS usr, 330 ft to N and W lines.

Refugio County—Houston Gulf Gas Co., Esperson Bldg., Houston, G. Strauch 1, lot 13, B 2, 660 ft to W and S lines. Fox 1, lot 4, B 9, 660 ft to E and S lines. J. T. Vance 1, lot 1, B 7, 660 ft to S and E lines. R. Lambert 1, I. O'Brien, 1000 ft to S & 1800 ft to E line. Refugio Oil Co., Houston, J. A. Lambert 5, Town Tract of Ref., 500 ft N of No. 3

Rusk County—W. T. Clayton, Henderson, J. C. Durand 1, A. Norris sur, 150 ft to S and E lines.

Shackelford County—Roeser & Pendleton, Inc., Fort Worth, A. Frye 20, S 384, TE&L sur, 680 ft to SW and 800 ft to SE line; 21, 965 ft to SW & 835 ft to SE line; 19, 400 ft to SW and 650 ft to SE line; 16, 247 ft S of No. 15; 15, 251 ft S of No. 14; 14, 252 ft S of No. 13; 13, 250 ft S of No. 12; 12, 250 ft SW of No. 10; 11, 252 ft E of No. 10; 10, 265 ft SW of No. 8; 9, 252 ft E of No. 8; 8, 292 ft SW of No. 4; 7, 251 ft N of No. 6; 3, 250 ft E of No. 4; No. 2, 254 ft NE of No. 1; 1, 55 ft E of No. 3. J. P. Baoles, et al, Cisco, L. C. Huskey 2, S 548, TE&L sur, 450 ft to NW and 750 ft to NE line. Home Oil & Gas Co., Albany, W. Huber 2, B 531, TE&L sur, 700 ft to NW and 400 ft to SW line. C. J. Hodges, Albany, W. Black 1, B 507, TE&L sur, 150 ft to NW & NE lines. Sedwick Oil Co., Moran, J. S. Dennis 14A, S 15, Lun. Asy. sur, 50 ft S of No. 14. Magnolia Pet. Co., Dallas, E. Meyers No. 3, S 86, ETRR sur 300 ft W of No. 1. Stephens Oil Co., Fort Worth, M. J. Leach 3, S 24, L A L sur, 450 ft to N and 150 ft to W line. C. Gordon, et al, Moran, E. S. Chisin 1, S 62, Univ. sur, 440 ft to N and 505 ft to E line. R. E. Burns 2, S 69, L A S sur, 150 to S and W lines.

Starr County—Dekle & McCarley, Brady Bldg., San Antonio, M. M. Garcia 1, sur 918, S 918, 160 ft to W and S lines.

Taylor County—Cady Oil Co., Moran, R. E. Bruns 14, L A sur, S 68, 150 ft to N and E lines.

Throckmorton County—Red Bank Oil Co., Castle Bldg., Tulsa, Okla. V. Parrott 5A, TE& L sur B 971, 466 ft to E and N lines.

Upton County—McCamey & Johnston, Fort Worth, Union Ld. Co. 1, S 5 B b-9, EL&R sur, 2185 ft to S and 250 to W line. Roxana Pet. Corp., McCamey, E. S. Hughes 4, W. Teer sur, S 4, 330 ft to W & and 1438 ft to N line. Marland Oil Co., Fort Worth, Sanger Bros. 18, J. H. King sur, S 18, B 3, 530 ft SW of No. 17; 16, S 1 B r, 660 ft S of No. 9; 17, S 18, B 3, 1060 ft W of No. 9; 19, S 1320 ft, then E 260 ft to No. 17. A. A. Reese 1, S 2 B 3, MK&T sur, 150 ft to S & E lines. Dixie Oil Co., Inc., Shreveport, La., A. S. Burleson 11, S 2, Nidever sur, 1650 ft to N and 5280 ft to E line. Union Land Co., Fort Worth, Union Land Co. 1, S 21, B 1, MK&T usr, 330 ft to S and W lines. Lockhart & Co., Colorado, R. H. Estep 1, S 18, B 3, MK&T sur, 330 ft to W and S lines.

Wichita County—Kimmel & Dillard, Wichita Falls, Fassett & Tuttle 1, DL&C sur, 150 ft to S and 300 ft E of No. 4; 4, 150 ft to S and 300 ft W of No. 1. Bridwell & Hendrick Oil Co., Wichita Falls, W. C. Witcher 12, B 13, AB&N&GC&SF sur, 520 ft to N and 150 ft to E line. A. L. Waugler 1, B 14, GC&SF sur, NE cor of NWB. Clark & Campbell, Wichita Falls, J. A. Grisdale 12C, B 9, W&T, GC&SF sur, 30 ft to W and 717 ft to N line. Sub-Div 14 11C, B 6, W&T, GC&SF, 931 ft to E and 545 ft to N line. Rio Bravo Oil Co., Houston, Fee d-6, S 31, B 5, H&TC sur, 450 ft S of D5; 4-5, 150 ft to S and E lines. Simms Oil Co., Dallas, W. H. Chilson 5, DcSL sur, B 3, Les. 4, 300 ft N of No. 4; 6, 300 ft W of No. 5. Bonchil Co., Wichita Falls, Beach Roy 42 CTRR sur, 241 ft W of No. 33; 41, 245 ft W of No. 19. The Texas Co., Electra, Waggoner 316, Ba-606 GC&SF sur, 2739 ft N and 769 ft to E lines of A-359; 318, S 13, B a-137, HT&B sur, 660 ft N of No. 313. J. L. Swanner, Box 768, Wichita Falls, Williams & Parker 5, B 3, J. McCool sur, 300 ft S of No. 1. F. P. Cullum, Wichita Falls, T. L. Burnett 1, S 2 T&NO sur, 150 ft to W and S lines. Continental Oil Co., Wichita Falls, S. B. Burnett "O" 02, T&NO sur, A 507, 150 ft to S and 499 ft to E line. Dr. Charles W. Wallace, Wichita Falls, Burnett 9X, NE, J. A. Bradford sur, 1980 ft to E and 1320 ft to S line. Swain, Holcomb & White, Burkburnett, Bonoho 3, Robertson sur, 200 ft to N and 150 ft to E line. Ascot Co., Wichita Falls, J. E. Roller 44, W. A. Grady sur, 700 ft ot E and 480 ft to N line. Perkins, Cullum & Stump, Wichita Falls, W. H. Chilson 7 B 11 and 12, D CSL sur 300 ft NE of No. 3. British American Oil & Prod. Co., Brown Bldg., Fort Worth, Parker 6, B 3 McCool sur, 300 ft W of No. 3. Coppock & Coleman, Iowa Park, Kemp & Kempner 3, B 82, HT&B sur, 300 ft N of No. 2. Beasley Drilling Co., Electra, N. E. Banta 1, T. Cook sur, 450 ft to N and E lines. W. H. Hamon, et al, Wichita Falls, Kemp & Kell 1, S 6, SPRR sur, 750 ft to S and 150 ft to E line. J. M. Hemby, Electra, B. B. Cochran 6, S 14, H&GN sur, 30 ft S of No. 4. J. O'Neil Wichita Falls, Rio Bravo O. 26, S 31, B 3, H&TC sur, 150 ft to S & W lines. Houghland Prod. Co., Staley Bldg., Wichita Falls, C. Birk 35, Cowherd Bros. sur, S 21, 250 ft NW of No. 30. Rubsam & Hunter, Westmoreland Apt., Wichita Falls, W. D. & L. McClure 4, B 5, GC&SF sur, 200 ft NE of No. 1 and 100 ft SW of No. 3. T. F. Hunter, 1st Nat., J. & J. Waggoner 20, S 1, GC&SF sur, 300 ft S of No. 14.

Wilbarger County—Phillips Pet. Co., Bartlesville, Okla., Waggoner HH5, S 42, B 4, H&TC rus, 20 ft to E and 1550 ft to S line; A1, S 43, B 4, H&TC sur, 222 ft to N and 201 ft to E line; QQ14, S 47, B 4, 339 ft N of No. 12; UU5 S 42, B 4. H&TC sur, 200 ft to W & N lines. Phillips Pet. Co., Bartlesville, Okla., Waggoner I6, S 43, B 4, H&TC sur, 64 ft N of No. 1; FF2, S42, B 4, H&TC snr, 200 ft to S and 186 ft to E line; D15, S 43, B 4, H&TC sur, 439 ft to E of No. 9; D14, S 42, B 4, 659 ft to N and 709 ft to E line.

Wheeler County—American Ref. Co., Wichita Falls, E. E. Carlton 1, S 29, B 13, H&GN sur, 1320 ft to W and 2640 ft to N line.

Young County—Magnolia Pet Co., Dallas, I. C. Little 10, I. Holman sur, B 1, 300 ft W of No. 3. Pitzer & West, Breckenridge, J. N. Boozer 2, J Garrett sur, 550 ft S of No. 1. Tidal Oil Co., Fort Worth, S. M. J. Benson 4, S 1450, TE&L sur, 300 ft N of No. 3. Consolidated Oil Co., et al, Wichita Falls, W. J. Logan 1, S 408, TE&L sur, 150 ft to E and 930 ft to S line. The Texas Co., Wichita, Falls, R. V. Tidwell 19, J. A. Hopkins sur, 433 ft S of No. 8. Roy I. Carter, Wichita Falls, S M. J. Benson 21B, B 1450, TE&L sur, 330 ft S of No. 17. Birdwell & Mayfield, Wichita Falls, A. Williams 9, S 26, YCSL sur, 350 ft W of No. 6. Simms Oil Co., Dallas, T. J. Routon 4, B 181, TE&L sur, 300 ft W of No. 2.

Zapata County—Magnolia Pet. Co., Dallas, R. Cuellar 2, sur No. 228, 600 ft E of No. 1.

Tulsa Geologists Plan Meeting November 6

Tulsa, Okla.—The Tulsa Geological Society has announced the program for its third meeting of the year, which will be held in the auditorium of the municipal building the night of November 6.

J. N. McGirl, chief geologist of the Silurian Oil Company, Tulsa, will present a discussion of errors common to drilling records and suggested corrective measures. R. W. Clark will give a discussion on the Geology of Okmulgee County, Oklahoma. The geologists expect to have many interesting discussions during the year from its members. The organization has a membership of 450, three fourths of these belong to the American Association of Petroleum Geologists.

The regular meetings are held on the first and third Saturday nights of each month.

Officials of the organization are A. F. Truex, chief geologist of the Twin State Oil Company, president; Frank A. Herald, Herald Brothers, vice-president; Miss Dolly Radler, Amerada Petroleum Corporation, secretary-treasurer.

Ask Power Line Extension to Kevin-Sunburst

Great Falls, Mont.—A concerted effort is being made by Kevin-Sunburst operators to interest the Montana Power Company in extending its line to the field. Experts have been figuring the difference between the old-fashioned steam costs and electricity. They are convinced that the latter will effect a great saving. Dehydration in winter has been a troublesome problem in the field. Electrical dehydration will be almost twice as cheap, according to those who have studied the situation. The wells do not usually yield much water when first completed but many have not been finished properly and water encroachment after a few months of producing is not unusual. Electricity will save thousands of barrels of water in the drilling of wells. Water is very scarce in the field.

New Dallas Manager

Sullivan Machinery Company announces the appointment of J. E. M. Schultz, as manager of its office in Dallas, to take the place of D. H. Hunter, who has resigned.

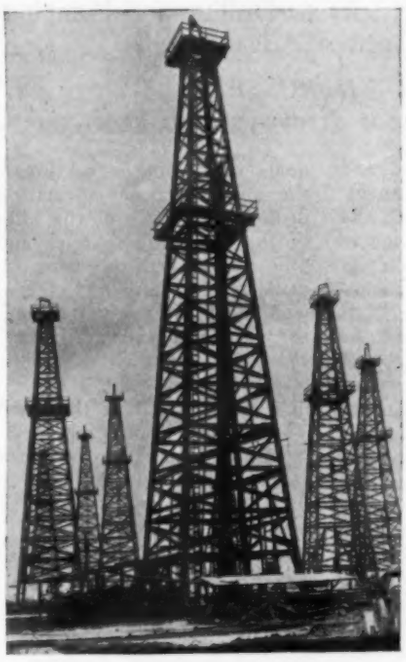
Mr. Schultz has had a long experience with this company, having been associated with its office at Knoxville, Tennessee, in charge of business in North and South Carolina, Georgia and Florida.

The Dallas office is at 522 Santa Fe Building. A warehouse and service station are maintained at the same address.

F. M. Wilhelm, secretary of the Prairie Pipe Line Company, visited the Texas headquarters of the Pure Oil Pipe Line Company, Prairie subsidiary, at Dallas late last week.

Webb W. Wilson has just returned to Los Angeles from an extended business trip to New York City and several Eastern petroleum fields in the interest of Wilson Oil Tools Corporation.

From California



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—and what a drop in pulling and replacement costs Root Penman & Co. experienced! Two dozen balls and seats a month was the quota of one of their superintendents. Then he put in NO-CO-RO DROPS and Seats. Six months passed—NOT A SINGLE REPLACEMENT HAD BEEN NECESSARY.

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Improved Drilling and Production Methods In the Gulf Coast Fields

Application of Electricity to Drilling and Pumping Seen as Greatest Advancement

By JOE H. RUSSELL
Assistant Superintendent of Production Gulf Production Co.

IN considering the subject assigned me for discussion before the meeting, it would seem that with the great number of wells being drilled in the Gulf Coast, there should be a great demand for and an opportunity to improve the methods of drilling wells and of producing oil from them. As a matter of fact, along with the demand and necessity for new and improved methods in operation, there have been some improvements made.

We are now passing through a strenuous drilling campaign at Spindletop and the quickest methods of drilling and completing wells are much too slow. Therefore, not a great deal of thought has been given to new methods. However, you can not help but compare the present method and equipment used in the present day drilling campaign at Spindletpo with the drilling campaign that occurred there in 1901. The differences in equipment and methods are staggering and the present day operators can hardly imagine how the old operators ever were able to drill a well. The "Old Timers" explain the reason as being that "Men were men in those days and not much machinery was necessary". Yet the development in 25 years of thought and study to the changed conditions of operations has brought about a great improvement in equipment and in methods.

I believe there has been a great deal more thought given to the development and improvement of drilling equipment and methods and to the completion of wells than has been given to the actual production operations.

Drilling Methods and Equipment

The greatest improvement that has been made in the methods of drilling and completing wells in the Gulf Coast is the improvement made in the rtoary equipment machinery used in drilling. Equipment more suitable and applicable to the duty imposed in drilling wells has been and is being steadily developed. The operators are now studying and are beginning to find out just what work, what duty the machinery will have to perform before a well can be drilled to the various depths in the quickest time and in the best possible manner.

I think more than ever before the oil operator is making "Careful diagnosis of drilling conditions," such as the character of formations to be drilled, the depth of the hole, the size of the hole, the manner and sizes of pipe to be set, the time required to drill to certain depths, then he knows what duty his equipment must be able to withstand and accordingly he designs the equipment to be used to perform the duty in the most workmanlike manner and in the quickest time. The drilling operation necessarily is becoming more and more a problem for the technical man who is practical. The technical man's duties are to diagnose and determine the faults and shortcomings of the methods, and the practical man along with the technician must correct them. We are endeavoring to design and specify just what kind of equipment is necessary and are not leaving it entirely in the hands of the manufacturer to give us what they think we need.

The keeping of complete progress records during the drilling of a well, charts which indicate and record time and energy consumed, amount of hole made, kind of formaiton drilled, during each minute's operation has opened the way for a complete scientific study to determine the best method of drilling. For instance, it has been determined accurately and with no guess work that during the progress of drilling a 3469 foot well in a Gulf Coastal field, which consumed 33 days, that only 17 per cent, or 5.61 days, was the drill bit actually on bottom making hole. That 33 per cent of the time the slush pump was in operation. The balance of the time was used up in going in and coming out of hole, setting casing,

*Paper read before the A. I. M. E. meeting at Tulsa, October 12, 1926.

W. ARMSTRONG PRICE, PH. D.
Geologist
912 Bankers Mortgage Bldg.,
Houston, Texas
Telephone: Preston 3764

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making pipe connections, reapirs to rig, circulating, and waiting on material.

Actual records of time were taken to indicate how long it required to drill a foot in many different kinds of formations with different weights of drill bit on bottom and revolutions of rotary table.

Need More Actual Drilling ..

From this information it would appear that an effort would be made to develop our machinery and improve our method so as to permit the drill bit to be on bottom a greater percentage of time, and to determine how each formation shcuild be drilled to the greatest advantage.

For instance, had our drilling machinery and methods permitted the bit to have been on bottom 25 per cent of the time with a corresponding amount of hole drilled, the well would have been completed in 2.6 days quicker time, which in labor, fuel and flush production would be a considerable amount of money.

I think that one method of increasing the time of the drill bit being on bottom making hole will be the use of collapsible bit. It is destined to become mroe and more in use. Several test wells have been drilled with varied degrees of success. However, if it can be perfected and proven practical it will reduce the time of drilling a well at least 30 per cent, as bits can be changed, cores taken without pulling drill stem. The saving in labor, wear and tear on equipment, fuel will be very great as compared with the present method.

The high pressure, large horsepower boilers, the twin cylinder engines, the enormous slush pumps, the three speed heavy draw works, the make and break rotary, the large travelling blocks, the spring break out and make up post, the spring hook, the combination steam trap and lubricator for the pumps and engine, the steam breakout gun, are all developments which have improved the drilling operations during the past year or so.

Electricity

I believe, however, that the greatest single improvement made in oil field operations recently has been the development and application of electricity to the industry, and the greatest improvement to the drilling end of the game has been the development of the Hild Universal Differential Drive for rotary drilling.

It is a scientific piece of machinery htat is at once practical and flexible and has opened the way for the drilling of wells to be done on a scientific basis.

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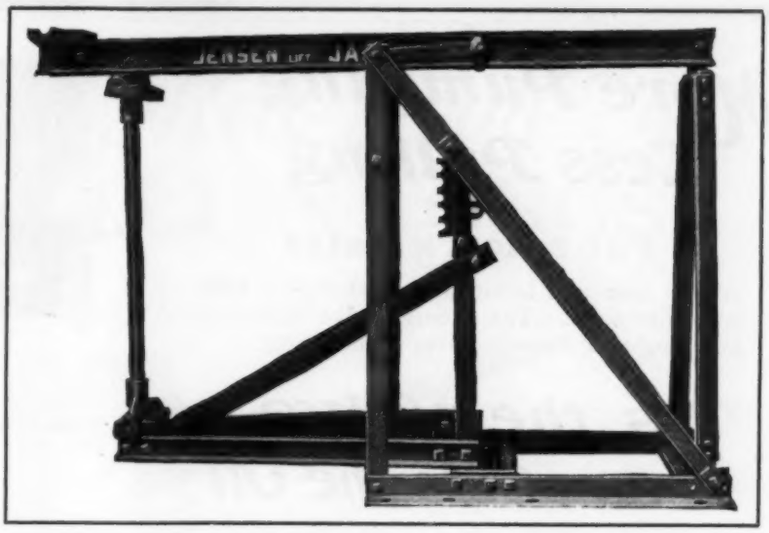

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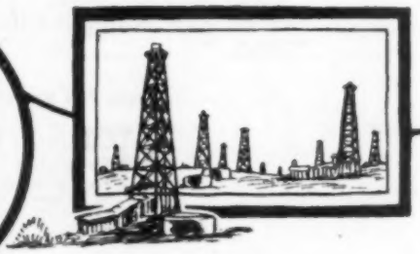

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WILLIAMS RAPIDUCTION THREADING MACHINE

Big stock of Oil Field Supplies carried in our warehouses for your convenience. Send us your orders or write today for prices and information. *"We Ship Quick"*

THE LARGEST SUPPLY HOUSE IN THE SOUTHWEST

PEDEN IRON & STEEL CO.

HOUSTON – SANANTONIO – SHREVEPORT

cally the feed of the drill stem or weight of the drill bit on bottom to any desired speed or weight and once fixed by the driller it will stay fixed, and will feed automatically at the set rate of speed. The human equation in the form of the driller is eliminated after the motors are once set. No dependency is placed on him to feed the bit manually and he is under no fatigue stress. There is no question but that it requires a scientific and a practiced knowledge of drilling operations in order to make use of the flexibility and capability of the machine. The driller must be one who recognizes immediately the changes in formation being drilled and upon recognition he must change his control so as to speed up or slow down the rate of speed with which he is feeding the drill stem. No twoformations drill alike, that is can be penetrated with the same degree of rotation or weight of drill stem, and the driller can not set his control to feed the drill stem at a certain definite number of feet per minute or inches per hour and forget about it if he is to take full advantage of the equipment at hand.

With this machine, and a good, practical, educated driller, well versed in the knowledge of formations, it has been demonstrated beyond any doubt that he, through experiment, has determined how different formations should be drilled to the best advantage. Very few drilllers will drill any formation alike, that is with the same weight on drill bit or same number revolutions of the drill stem. This is because no hand fed drill stem can be fed uniformly for any length of time. The equipment will not permit it. There should be only one correct way of drilling each formation and with the Hild rig it can be so drilled if the driller has that knowedge.

The Haliburton Automatic Drilling Machine, designed for either electric, steam, oil or gas engine operation is now being tested at Goose Creek and I understand is operating very satisfactorily.

An engineer by the name of C. R. Edwards, president of the Houston Engineers, Inc., Houston, Texas, has patented a new process for use in drilling wells. This method is only the addition of vibration to the bit of the ordinary hydraulic rotary system. The elasticity of the rotary drill stem is the seecret of the success of the system of drilling. It permits the bit and a little of the lower end of the drill stem to be very rapidly vibrated up and down against the bottom of the hole. These vibrations are caused by rapid "water hammers" in the drill stem. These vibrations are set up in the drill stem by a hydraulic vibration generator driven by a high speed engine or motor. This machine is in course of

construction and is not yet on the market.

Production Methods

Considering strictly the production operations and the improvement that has been made, there have been few changes over the old time methods, especially as far as that part of the equipment under the ground.

It is true that the standard rigs proper are greatly improved, in that the old band wheel, long engine house, steam engine drive have been superseded by the use of a double reduction gear or a Lufkin worm gear. All parts of the rig are now being made out of steel as nearly as possible.

The actual pumping equipment still consists of varied assortment of special pumps, plunger and cup type, long stroke devices, but it seems in the Gulf Coast that each well has a pumping condition all its own and requires special attention and a different kind of pumping equipment.

There are so many sand strata with their different gravities of oil, various sand conditions, salt water actions with its effect on tubing, valves, balls and seats, that there can be no standardization. equipment that will work good in one well will not pump in another.

The use of all valves, crosses, etc., for well connections is a decided improvement over the old cast iron valves, both from the standpoint of strength and the ease of handling.

If any one thing can be said to have more greatly improved drilling and production methods in the Gulf Coast than any other it is the general application of electricity to oil field operation. There is no oil field operation performed by steam energy today in the Gulf Coast to which electrical energy can not be applied to a greater advantage from viewpoint of flexibility, power required and economy.

Our company will not purchase any more steam drilling rigs where electric power of a dependable character and of a fair rate can be obtained. We have fourteen electric rigs in operation now and have six more on order.

As to their operation, we drilled 42 wells with them last year, varying in depth from 1000 to 4200 feet, and found that they were as flexible as steam, more powerful, as fast and three times as cheap to operate. No extraordinary trouble was experienced. We have more than 500 wells being pumped individually by electricity and believe we have increased our production 10 per cent.

The Gulf Coast fields within the next year will have their production operations almost 100 per cent electrified.

Only Red-Head Tongs
KLEIN TONGS

Of course, you are more interested in what is *in* the tongs you purchase than how they are painted.

The red paint on the head of TRANSIT TONGS is a guarantee that they are ***genuine*** Klein Tongs, made as Mr. John S. Klein designed them, in the works where he was Superintendent.

The tool steel lined hook, the rivet supported at each end, extra heavy hand forged construction and the painstaking location of the bit to get just the proper bite, are all features of TRANSIT TONGS.

Bulletin 5-C "Tools for Pipe Line Construction" on request.

NATIONAL TRANSIT
Pump & Machine Company

Oil City, Pa.

New York Philadelphia Pittsburgh
Cleveland Houston Tulsa Denver

"CENTRAL" LINE PIPE

Of the same high grade we have maintained in "Central Standard Pipe for over sixteen years.

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California
E. C. SAUL,
Monadnock Building, San Francisco, California

THE BAKER DRILL PIPE FLOAT

Write for Complete Descriptive Folder

Is Essential to Safety When Running Long Strings.

The safety factor appeals more to the operator than any other feature—safety to the drill pipe, derrick equipment, and men. As an extreme precaution, four lugs are provided at the bottom of the valve which prevent it from seating on top of the water course opening through the pin should it become detached from the valve stem.

BAKER CASING SHOE COMPANY

Box L, Huntington Park, Calif.
Coalinga, California
George J. Hausen, Inc., Representative,
Taft, California

Mid-Continent Representatives:
B & A Specialty Co.,
404 W. First Street,
Tulsa, Oklahoma

BASCO

Export Representatives:
Buck & Stoddard,
25 Broadway,
New York City

Tret-O-litE

(Reg. U. S. Pat. Office)

PROCESS PATENTED. The Barnickel processes for treatment of cut oil and other petroleum emulsions by the use of chemical agents are protected by valid process patents issued by the United States and foreign countries.

The purchaser of TRET-O-LITE is licensed to practice the Barnickel processes to the extent permitted by the quantity of TRET-O-LITE purchased. He is not licensed to use any other chemical covered by the Barnickel patents either alone or with TRET-O-LITE.

WM. S. BARNICKEL & CO.
ST. LOUIS, MO.

Phillips Statement Shows Increased Earnings

Bartlesville, Okla.—Financial statement and report of the Phillips Petroleum Company for the first nine months of this year shows net profit of $15,760,992 after deducting interest and federal taxes and estimating depreciating and depletion. This earning is equivalent to $6.55 a share earned on outstanding 2,407,082 no par shares.

Earnings for the corresponding quarters of 1925 were $9,327,691, or $3.87 a share.

Consolidated income account for the first nine months of 1926 follows:

Total income	$39,955,952	$26,490,916
Expenses	10,856,500	8,108,246
Balance	$29,099,452	$18,382,670
Interest & ord tax	852,870	1,069,900
Res fed tax aban leased etc.	3,418,986	1,300,000
Estimated deprec & depletion	9,066,604	6,685,079
Net profit	$15,760,992	$ 9,327,671
Dividends	5,413,357	2,850,270
Surplus	$10,347,635	$ 6,477,421

Consolidated balance sheet as of September 30, 1926, follows:

Assets: Plants and properties, $135,690,886; investments and advances, $250,545; accounts, notes and acceptances receivable, $7,450,712; inventories, $10,238,954; expenses paid in advance, $571,466; cash, $3,810,953; due on stock purchase warrants, $7,710; deferred charges, $1,133,091; total, $159,154,317.

Liabilities: Capital stock and surplus (represented by 2,407,082 no par shares), $110,592,099; reserve for depletion and depreciation $33,084,759; reserve for abandonments, federal taxes and contingencies, $4,245,460; deferred liabilities, $4,349,903; notes, accounts and accruals payable, $5,076,784; dividend payable October 1, 1926, $1,805,312; toal, $159,154,317.

Part of the report of Frank Phillips, president, to stockholders reads:

"Although expenditures in the first nine months for capital account have been larger than ever before, the company is still free of bank or other indebtedness, with the exception of purchase money obligations and current bills for materials and equipment. Looking into the future as far as it is possible to see in the industry, we do not contemplate any necessity for borrowing or financing.

"Your attention is invited to the major item of nearly $28,500,000 additions to capital assets which were made during the first nine months of this year. In the opinion of the management these large expenditures have justified as evidenced by increases reflected in above comparisons, together with added and increased reserves, in which investments we have been most fortunate and which we confidently believe are conservatively worth $50,000,-

000 over and above costs. These values, together with nearly $25,000,000 of cash earnings from operation, reflect a situation which we hope you will feel justifies our procedure."

Conditions in the Texas Panhandle, as reflected in this company were summed up as follows:

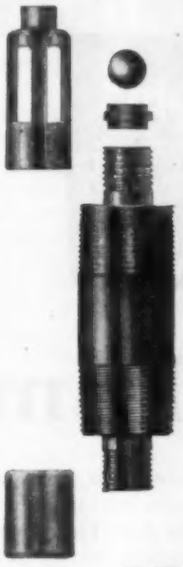
"Because of inadequate transportation facilities and the present unsatisfactory price for oil produced in this territory, the company is storing the major part of this production, which not only requires an additional investment for facilities for storing the oil, but deprives us of a large amount of cash income. At present we are engaged in the transfer of 3,000,000 barrels of empty steel storage from Burbank and other districts to the Panhandle area. The program here will probably be doubled between now and spring. In order to fully protect these properties we must continue with the drilling of wells and the storage of part of the oil until such time as it can be moved at a price more commensurate with its value."

Patent Office Quarters Declared Inadequate

Washington, D. C.—Fire in the patent office, where the records of the more than 1,600,000 patents granted to American inventors are stored, including thousands of great importance to both the oil producing and refining industries, might result in losses of billions of dollars to American business and "bring about a national calamity of the first order," according to Thomas E. Robertson, commissioner of patents, who is urging that a new building be erected in which to house the office, now occupying a structure built shortly after the death of Thomas Jefferson.

The patent office for many years has been too small, both for the handling of its business and for the filing of its records, and the time is rapidly approaching, it is declared, when congress must provide adequate quarters. When the present building was erected only 200 or so patents were issued annually, while today more than 45,000 patents and some 25,000 trade marks and designs are handled yearly. The number of patents annually granted the oil industry alone is more than three times the number granted to all industries when the building was planned.

Millions of patent records on which rest the rights to the most important processes and manufactured articles used in this country are stored on wooden shelves with absolutely no protection from fire, although efforts are being made to install steel shelving as rapidly as possible. Destruction of these records would leave the government without evidence of prior invention on which to base the issuance or withholding of patents for future inventions, and a fireproof storage space for existing patents has long been urged.



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REX STANDING VALVE

ITS REVERSIBLE, TWO IN ONE VALVE SCREWS IN BOTTOM OF WORKING BARREL COLLAR — REDUCES YOUR TUBING JOBS.

Manufactured in Brass or Steel

Sold by Supply Houses

REX SUPPLY COMPANY
Sour Lake, Tex.
Patented Aug. 15, 1922, No. 1425710

GOULDS PUMPS

Pumps for All Pipe Line and Refinery Services

Catalogs and Bulletins on request
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Incorporated
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Manufacturers of
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All Pioneer Oil Well Shooters

TEXAS OIL MAPS
County and District
Catalog on Application
HEYDRICK MAPPING COMPANY
Wichita Falls, Texas

ORIGINAL EOTVOS TORSION BALANCES
Sold and your personnel trained, or rented by the month or by the acre.
DR. GEORGE STEINER
Cotton Exchange Building
Houston, Texas

Fine Pumps

THERE is the flivver of the motor car world, going clumsily and noisily about the things it is designed to do. There is the dollar watch and the alarm clock in the field of time keepers, ticking ostentatiously the seconds away, content to be somewhere near correct. And there are the pumps that anyone can make, moving fluids everywhere with never anywhere great efficiency.

Perhaps you like the good car, the railroad watch, the fine pumps.

There are Transit Pumps on jobs to which no ordinary pump dare aspire. They have furnished the solution to every pumping problem of field, pipe line and refinery. They may be had, too, for the ordinary duties, with longer life and greater efficiency to recommend them. They are often imitated but never equalled.

Before you buy another pump, write our Tulsa office or ask the Frick-Reid Store in your field for literature on

TRANSIT

FRICK-REID SUPPLY CO.

Tulsa, Okla. **Pittsburgh, Pa.**

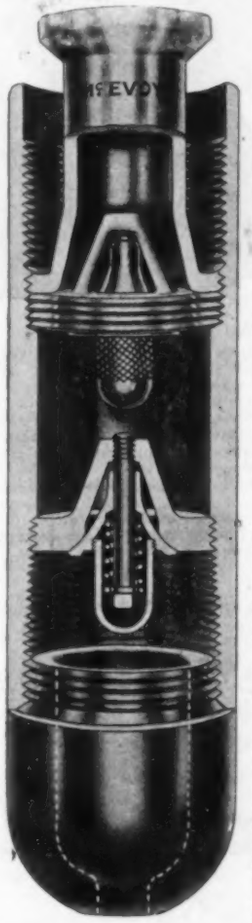
In Oil Field Equipment - the most HUMAN organization in America

NEW EQUIPMENT, CATALOGS, BULLETINS, BOOKS

McEvoy Introduces New Set Shoe Assembly

J. H. McEvoy and Company have recently brought out a new set shoe assembly, equipped with one or two back-pressure valves of a new and improved design.

These valves are of the tulip stream line type. Cages, holding the valves, have rounded corners with a larger area than the valve area when wide open.



The springs and the stem are enclosed against injury in a housing filled with grease. The spring automatically keeps the packing sealed against the valve stem.

Assemblies are made in the following sizes: two and one-half, three, three and one-half, four, four and one-half, four and three-fourths, five and three-sixteenths, six, six and one-fourth, and six and five-eighths inches.

Further information can be obtained from the manufacturers, J. H. McEvoy and Company, Houston, Texas.

Standardization Handbook Now Ready

In order to put the American Petroleum Institute Standards in convenient form for ready use, the American Petroleum Institute, Division of Standardization, 1508 Kirby Building, Dallas, Texas, is now getting out a Standard Handbook.

Thse books are obtainable in various sizes to suit the requirments of field men, engineers, production superintendents, etc., and the smaller sizes are convenient for pocket carrying. Sizes of covers range from four and one-half by seven inches, to five by seven and one-fourth.

Pressboard covers three and seven-eighths by seven inches can also be obtained. These pressboard covers are punched to fit specifications, but are furnished in two sections, front and back. Specifications are held in place with ordinary round-head staples or fasteners. These are suitable as transfer binders, or for field use where a semi-permanent binding is desired.

All the specifications are of the same size, three and three-fourths by six and three-fourths inches.

With each handbook there is an index, table of contents, plan of organization, and personnel of each committee included with each handbook.

A permanent record will be kept by the A. P. I. Division of Standardization of all covers sold, so that the owners may be kept advised of the status of the various specifications.

Additional information with prices, etc., can be obtained by writing the Dallas office of the Institute.

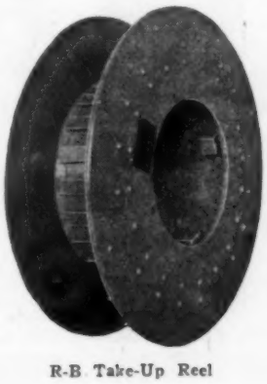
Braden Take-Up Reel Is Economy Device

A new Take-up Reel, manufactured by the Braden Company, Tulsa, is meeting with a favorable demand.

This reel is constructed in two parts, all-steel material, welded and riveted. It is designed to be used exclusively with the R-B winch, utilizing the power transmitted through the winch. The reel is quickly attached and removed from the winch drum by means of four screw bolts.

When the wire is reeled in, the reel is removed from the winch drum and taken apart, leaving the wire coiled loosely on the base of the reel. Wrap wires can be applied to keep wire from uncoiling.

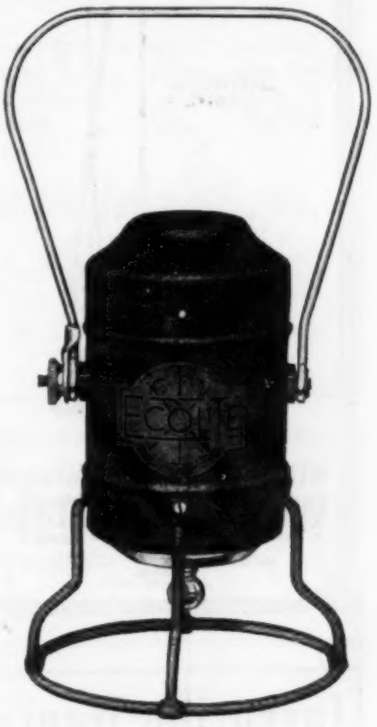
Dismantling tests made with the reel have shown a substantial saving in dismantling costs, referring to reeling wire only. The coil produced by the reel is without kinks, is compact, and can be easily handled when used again.



R-B Take-Up Reel

The Braden Company is well known in the oil fields because of the popular R-B winch, a Braden product.

More complete information will be supplied by the company on request.



Ecolite Lantern

Handy Flash Light Lantern for Field Use

An electric flashlight lantern that should prove of great service in field operations is being manufactured and distributed by the Economy Electric Lantern Company, 549 W. Washington Boulevard, Chicago, Illinois.

The lantern is compact and is substantially made.

The bail folds down over the base and may be used either rigid in upright position or swinging.

There is a combination flasher button and sliding switch.

The bulb is set in a sleeve extending downward from a reflector, thus giving a combination spot and diffused light, and throwing a light upward at an angle of 45 degrees. Sufficient latitude in bulb contact takes care of varation of different bulb filaments for focusing concentrated light.

The lantern is equipped with concentrated Mazda filament bulb. There is a receptacle in the lid for two extra bulbs.

Any standard make of lantern type

Invention Wanted

Old and thoroughly honorable manufacturing concern wants to get into oil country specialty field. If you have a new idea or patent, address Box 1112, Shreveport, La.

REGISTERED PATENT ATTORNEYS
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Send for blank form
EVIDENCE OF CONCEPTION
Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER & ALLWINE
440 Ouray Bldg. Washington, D. C.

Write for my State of Texas oil map free. Oil leases exclusively. Reference: Mercantile Agencies.
C. W. WEBSTER
W. T. Waggoner Bldg.,
Fort Worth, Texas

EDWIN B. HOPKINS
CONSULTING GEOLOGIST
25 Broadway
NEW YORK

dry cell battery can be used in the lantern.

The complete lantern weighs two and one-half pounds. It is 11 inches high. The base is six inches in diameter. With the bail folded under, the height is nine inches.

Further information may be obtained from the company on request.

W-K-M to Distribute the Senco Gauger

The W-K-M Company, Houston, has recently added to its list of equipment, the Senco Oil Gauger which is manufactured by the States Engineering Company, 600 East Lombard Street, Baltimore, Maryland.

Although this gauge has been on the market for several months, it is new to the coastal section of the country and is comparatively new in the Mid-Continent. Wherever it has been used, the gauge has given extraordinary satisfaction.

Briefly described, the gauge is as follows: It consists of three parts: the aluminum housing, the tape, and the plumb-bob.

The housing is of polished aluminum and is practically water-tight. On one side is a hand-fitting handle for gripping the gauger while lowering or winding the tape. It is centrally placed so that the mechanical leverage when winding is negligible. On the other side is folding handle for winding. It folds in out of the way when the tape is not in use.

The steel tape is three-eighths inches wide, 50 feet long, graduated into feet, inches and eighth inches. It is practically indestructible, except from deliberate abuse. Each tape is interchangeable; a replacement can be made in a few minutes without the use of tools. Additional length tapes can be provided and used in the same housing.

The bob is made of brass and graduated in quarter inches.

PAUL F. RUTLEDGE

formerly assistant purchasing agent of the Texhoma Oil and Refining Company at Wichita Falls, Texas, who now is manufacturer's representative in oil field supplies for North Texas. Offices have been opened at 454 Harvey-Snider building in Wichita Falls. Including other lines, Mr. Rutledge is representing the Hercules Supply Company of Dallas, Missouri Wood Working Company of St. Louis, Ratcliffe Rubber Company of Dallas and will handle oil well pumping and surface equipment, steel buildings, steel drums, Ludlow valves, Vogt fittings, casing couplings and casing shoes.

A feature of the gauger is the wipers. In the end of the housing through which the tape passes there are two wipers made of a special long-wearing material which is non-abrasive.

A set screw adjusts the pressure on the tape. As the oil-covered tape reaches these bearers, the oil is cleaned off and the tape is wound into the housing clean. For repairing, the set

Axelson Baseball Team—captors of the 1926 championship pennant in the Industrial League, Southern California. Reading from left to right: front row, Moran, Zimmer, Aure, Phil Harris, Reese, Gruel and Spiher, Back row, Shorty Harrold, Brandt, Neeb, Youngblood, Jack Harris, Reith, Dapper, Johnson and Palmer.

screw can be loosened, the housing opened up and the tape reel removed.

Further information about the gauger can be obtained from the W-K-M Company, West Building, Houston, Texas.

Steam Purifiers Help Assure Standard Steam

Due to the fact that there is no definite standard specifications for clean dry steam, Andrews-Bradshaw Company, 530 Fourth Avenue, Pittsburgh, Pennsylvania, have established such a standard, which is given below:

"Steam shall be entirely free from all solids—both soluble and insoluble. Samples of condensed steam shall not show more than nine parts total solids per million, which is the tolerance to cover dissolved copper and iron from the test condenser, unavoidable dust contamination during the collection of the sample and its evaporation and unavoidable errors in the laboratory determination of total solids.

"Steam shall be entirely free from all moisture. Throttling calorimeter tests at any time shall not show a variation of more than two-tenths of one per cent from 100 per cent dryness based on the determined normal of the calorimeter. The permitted variation of two-tenths of one per cent is the tolerance for unavoidable varaiations in radiation and thermodynamic changes."

Andrews-Bradshaw Company recommends six-stage, low-velocity steam purifiers to obtain steam of the above specifications.

Further information can be obtained from the company on request.

Merco Nordstrom Catalog on Plug Valves

A valve catalog of exceptional interest has lately been published by the Merco Nordstrom Valve Company, subsidiary of The Merrill Company, New York, San Francisco, Chicago, Houston and Cleveland.

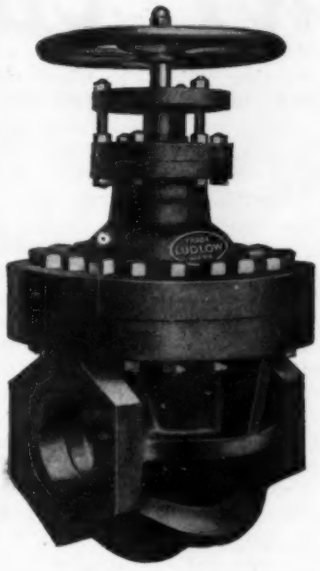
This catalog deals exclusively with Merco Nordstrom Plug Valves, and is a handbook on this subject. Each type of plug valve made by the company is shown in detail. Special advantages of the plug type valve are discussed, as well as the best types of valves for various kinds of service.

There is a cross-section sketch of each valve listed in the catalog.

In addition to the various valves listed, there is a special section devoted to Merco lubricants which are prepared especially for use in Merco plug valves.

Copies of the catalog may be secured by writing any branch of the company or the home office at San Francisco, asking for Catalog No. 5.

VALVE VALUES



are not determined by the original costs but by the service rendered and the cost of upkeep over a period of years.

Judged on this basis LUDLOW DOUBLE GATE VALVES are the most economical valves you can buy.

Let our nearest office prove this statement to you by telling you the wonderful record of success back of LUDLOW DOUBLE GATE VALVES.

The Ludlow Valve Mfg. Co.

(Established 1866)

Factory: Troy, N. Y.

BRANCH OFFICES:

Kansas City, Mo. Chicago, Ill. Boston, Mass. Pittsburgh, Pa.

BUY USED PIPE

and Save the Difference

50,000 ft. 2-inch used line pipe.
25,000 ft. 3-inch used line pipe,
75,000 ft. 4-inch used line pipe,
30,000 ft. 6-inch used line pipe,
10,000 ft. 8-inch used line pipe,
4,600 ft. 4¾-inch 15 pound Coalinga casing,
8,000 ft. 8¼-inch 32 pound casing.

One String 6″ Rotary Drill Pipe with Tool Joints.

Two miles or approximately 200 tons No. 1 60-lb. relaying rails complete with spliced bars and bolts.

We buy abandoned pipe lines and oil wells. If you have any to sell, communicate with us before you dispose of them.

Keystone Pipe & Supply Company

Eastern Headquarters: Butler, Penna.
Western Headquarters: Fort Worth, Texas, 607 Holmes Bldg.
BRANCH STORES:
Wichita Falls, Holliday, Vernon, Breckenridge, Texas.

Oil Well Screen

Howard Smith Co.

Houston, Texas

LETTERS OF Paul Peebles P.S.G.

My dear Cleopatra:

Cleo, honey, I am glad you did not take no exceptions to me writing to you last week on the mashine and having that young lady to write it for me, so now I have got off by myself in a room with nothing but that there dictating machine I was telling you about and I am talking to you, honey, just the same as if it was a telephone or a radio that I was talking to, only like I said a fellow feels like a fool making a speach to a piece of machinery. Hunny I was kinder afraid that you would think that I started writing to you on a typewriter because I thought you could not read writing as well as you can read reading, but I have been writing you writing so long that I know that you can read writing as good as you can read reading.

Hunny I also want to appologize to in what I said last time about what that cylinder on the dictaphone looks like. I said it was like a tool joint because I did not know how to spell coupling, and I had forgotten that the girl has to do the spelling with this system I am using now. Maybe, hunny, I am mixed up about it and thought then that she did not know how to spell coupling, or maybe I had it all mixed up in my head. But anyway I have seen a picture of a coupling since then and it looks just like a picture of this hear thing I am talking on now would look like if you was to have a picture made of it.

Well honey from what I hear I missed a mighty fine opportunity by not going to that engineers meeting they had up at Tulsa, on account of now they are making a branch of the society right here in Houston and I am afraid that they will want me to be the president of the local chapter and I do not know enough about it to know whether or not I want to be it. Julius Fohs came all the way down here after the meeting just to ask me if I would work up a local chapter here, but I told him since he did not ask me to read a paper at the Tulsa meeting I thought he had his nerve to be asking me to do something like that. It is kinder like having somebody to ask you to Sunday dinner after Thanksgiving and eating turkey hash. But maybe I will get in it after they get things to going. But I had to give Julius some kind of a excuse besides my well known native modesty about wanting to hog the whole show on anything like that, so I told him to go ahead and get John Suman to do the work and if they do not fall down on getting the boys lined up I would maybe take charge of it later on.

Another thing I mentioned in my letter last week needs some correction, because I maybe gave you the impression that I am going to Shreveport for the fair, which I am not, on account of they had such a good day from me being there last year that they are going to let that record stand for all time. Slim Volmer came up to tell me about it. He said that he had been up there recently and that George Baird doesn't want to lead all those bands this year and so they are not going to have any oil fair this year, only of course the Peebles No. 1 derrick is still standing out there and all the boys from Louisiana and Arkansas that happen to be around will be reminded of me when they see it. That well has been on the scout reports so long as a derrick that I guess the notation ought to be changed to "shut down for funds." But anyway we are not going to have any special train this year, and I dont care much because old man Scott never sent me no annual pass over his road for what I done for him last year, which was a plenty. But railroad corporations are mighty ungrateful.

But honey I have got a fine scheme which I am going to work on which well be a fine idea if it works and might upset all of the theories on the formation of oil, even the theories I invented. Also it will revolutionize two important industries which I have been connected with from my youth up, as a fellow says in his speach.

Well where I got the idea from is kinder funny.

You know they are all the time talking about when gasoline runs out. So many fool sayings are being said about oil will soon be all gone that a few conservative fellows are hesitating about trading in their worn-out fords because they are afraid that the oil will be all gone before the ford wears out. well that is making business bad.

Then these fellows, or some of them, say that the hope of motor fuel is in making it out of vegetables. I guess they are afraid to say it, but what they really mean is corn, I guess, but that would be a violation of the amendment and a sacrilege to insinuate that corn liquor would ever be used to run fords with.

So to keep them from putting corn to such an inferior use, I am working out this scheme, which I ask you if it aint reasonable and a good idea.

I guess you have heard that there is a too big cotton crop and it looks like they wont never use it all up, on account of nobody thinks they wont ever have any more cotton whenever they go to putting some in storage.

Well maybe you do not know it, but cotton is carbon and also has grease in the seeds, so I have desided that a fine scheme would be to distill cotton into gasoline.

Right off the reel it would not work, because cotton costs about 12 cents a pound now and the farmers say that when the bool weevils don't eat it all up they can't live unless they get 15 cents for it. I aint very good at their arithmetic, but there is some psychology somewhere on that. But I aint going to talk about psychology too much because I do not know if this girl can spell it or not, or if you know what it means.

But if my experiment works and I can put hydros with the carbon in the cotton and make gasoline out of the lint and lube oil out of the seed, well it will be a fine stunt and the world will be insured against a gasoline shortage.

Like I said, it would not work right off because gasoline sells for about three cents a pound and the cotton would cost more than that unless I mixed a whole lot of water with the hydros to make it weigh heavy. I do not know how hydros sell by the pound as I aint never bought none, but that is a detail that can be worked out.

The important thing is that I would find a ultimate use for all the cotton that could ever be grown. Then if I could show them that when the regular oil is all gone we will need a big surplus supply of cotton to make gasoline out of, well maybe Henry Ford would step out and buy up all the cotton and store it, because anyway he has been trying to buy that Mussel Shoals hydro-electric plant from the government, and I am pretty sure that with a few minor changes a hydro-electric plant could be changed to a straight hydro plant, so if you put carbon in it you could run it through as hydro carbon.

So honey I am going to get to work on that experiment just as soon as I can, so if you hear about me being blowed up in a accident you will know that I have carried my secret to the grave. You know that cotton is pretty powerful stuff when it is mixed up with some other chemicals, so it might blow me up. But I am now on the trail of the greatest scientific invention of the age.

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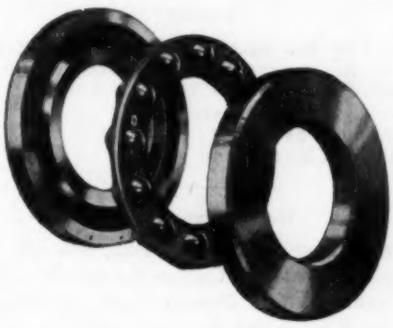

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SQUEAKS FROM THE BULL WHEEL

Babe Not Only One Who Had Trouble With His Pants During the Service

Fred Dallas, drilling superintendent for Rycade Oil Corporation in the Gulf Coast territory, has after a bitter fight of considerable duration managed to repossess his fanciest pair of trousers. Peace has been finally restored at the Rycade headquarters following a period of razzing on Dallas that grew to the point of endangering some of his fellow workers, who profited in fun from Dallas' hard luck.

Dallas works on hunches to a great extent. During one of the world series baseball games, the returns of which he was watching at the Houston city auditorium, he had a hunch the Cardinals were going to take the day. He wagered all he had in his pocket. The game progressed, and the Cardinal light shone still brighter, but his opponent had faith in the Yanks and through madness kept raising the bet. Dallas began betting his personal effects until only his pants were not behind St. Louis. The Cardinals got another man on, and Fred bet his pants. Lady Luck got fickle, and showered down on the New York boys. After the game, which the Yanks took by a shade, Dallas' gambling partner had no mercy and the spoils went to the victor. Friends helped Dallas get back to the office but refused to retrieve his trousers. Pay day recently came at Rycade, and the company's drilling superintendent is back in his usual spic-and-span style.

More About That Louisiana-Texas Golf Game

F. Ray McGrew, whose participation in an inter-state golf match in which he and M. O. Rife of the Gulf attempted to prove their skill against a team composed of Lee Wilson and Tommy Cochran from Texas, advises us that as an aftermath of the golf game in which the Louisianians proved themselves easy for the Texas champion, a "cut-throat pitch" game prevented the removal of any Louisiana money to Texas. It is intimated by Mr. McGrew that while the representatives of the "big interests" may not be adepts at shuffling niblicks and irons, they do know their paste boards, and that while the "independents" may be able to get away with something sometimes, it is never for long.

Anent the golf game, in which he admits slight defeat, Mr. McGrew has become philosophical and poetical to the extent of the following ditty which has not yet been set to music:

"Perfidy"

It is hard to believe that all men are not square.
But after you've lived and been somewhere,
You realize this.
But there are times when
You are likely as not
To be framed by a friend.

"New Mexico" Sand

It remained for an Amarillo oil man, one who has several wells to his credit in the Carson-Hutchinson field, to "discover" the famous New Mexico sand, for which a futile search had been made for 20 years.

In the lobby of an Amarillo office building a box of the "sand" had been placed for inspection. In it stuck a card, bearing the inscription, "Bayshore," indicating the Bayshore semi-wildcat well in Gray Countyy had picked up the coveted sand.

The prominent operator chanced by, noted the difference in color of the sand in the box to the usual samples from the field and dug his fingers feverishly into the contents, and then shouted to the crowd about him: "It's the pure 'New Mexico' sand, boys, the first I've seen in 20 years."

The crowd gathered about him excitedly—

But just then the Negro porter edged his way in to take possession of his box of floor sweep he had set down while he went to the basement for a broom.—Wichita Beacon.

More Bull

Recently a bunch of enginers set up their little tent on a Kansas farm and made ready to let the Torsion Balance have a shot at recording subsurface conditions.

But a hefty bull came along and did not like the addition to the scenery. He destroyed the tent, or whatever sort of house the balance requires.

It is not publicly known whether the engineers moved on or tied the bull.

The Second Fiddle

I like the little fellows who don't count for very much;
It isn't from the cellos that you get the finer touch;
The roaring of the basses and the rattle of the traps
May have heir proper places in the harmony, perhaps;
But down there in the middle, inconspicuously there,
Is the the little second fiddle that is carrying the air.

The crashing of the cymbal shakes the ceiling with its "Blam!"
The piccolo is nimble ;"Boom" you hear the drummer slam;
The trombone slides and screeches; "Tut,tut, tu," the proud cornet
Just a little higher reaches than it's ever tutted yet;
The main High Diddle Diddle runs his fingers through his hair—
But the little second fiddle still is carrying the air.

We talk about the bosses with the big and busy brain,
Making profits, taking losses,—but the boss would boss in vain
If he didn't have assistance, someone handy he could trust;
He would never go the distance and the company would bust.
Here's the secret of the riddle of successes ev'rywhere—
There's some little second fiddle that is carrying the air!

—Union Oil Bulletin.

'Ballad of Go-Getters

I hate to be a kicker, I always long for peace,
But the wheel that does the squeaking is the one that gets the grease. —Sanford Herald.

You tell 'em kid—you're peaceful and not too hard to please,
But the dog that's always scratching is the one that has the fleas. —Miami Tribune.

"I hate to be a kicker" means nothing in a show;
The kicker in the chorus is the one that gets the dough. —Youngstown Telegram.

The art of soft-soap-spreading is a thing that palls and stales,
But the guy who wields the hammer is the one who drives the nails. —Cleveland Plain Dealer.

We like the peaceful fellow who keeps quiet at his toil,
But the well that does the gassing is the one that flows the oil.

Mrs. William: "When I looked out of the window I was glad to see you playing marbles with Tommy Smith."

William, Jr.: "We wuzn't playing marbles, Ma. We just had a fight and I was helping him pick up his teeth." —Tiger.

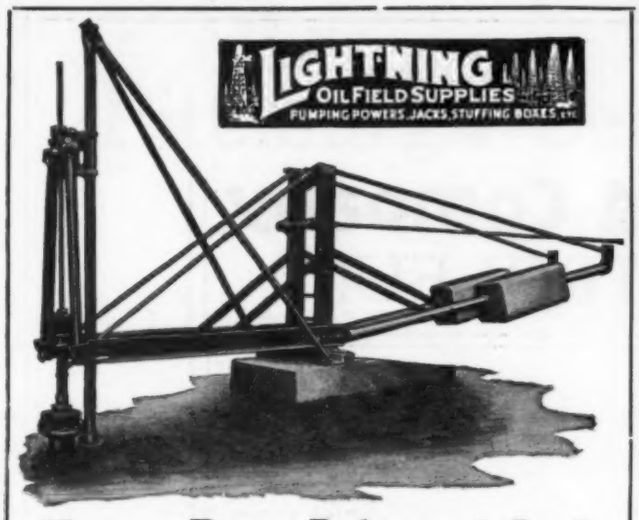
What She Meant

It is related that when a young man, who had been seeking the hand of a girl in marriage, popped the question, she replied, "You must go to father." The disconsolate young man reeled off the following rhyme:

"She knew that I knew that her father was dead;
"She knew that I knew what a life he had led;
"She knew that I knew what she meant when she said, 'Go to father'."

The Apostle Benamed

"What is your favorite chapter in the Bible, Uncle Ajax?" an old darkey was asked. Uncle Ajax smacked his lips. "Dat one whar' tell about de 12 opossums, sah!" he replied.—Kansas City Star.



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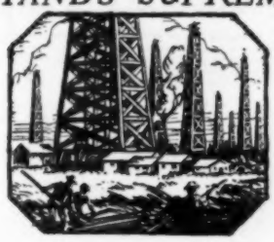

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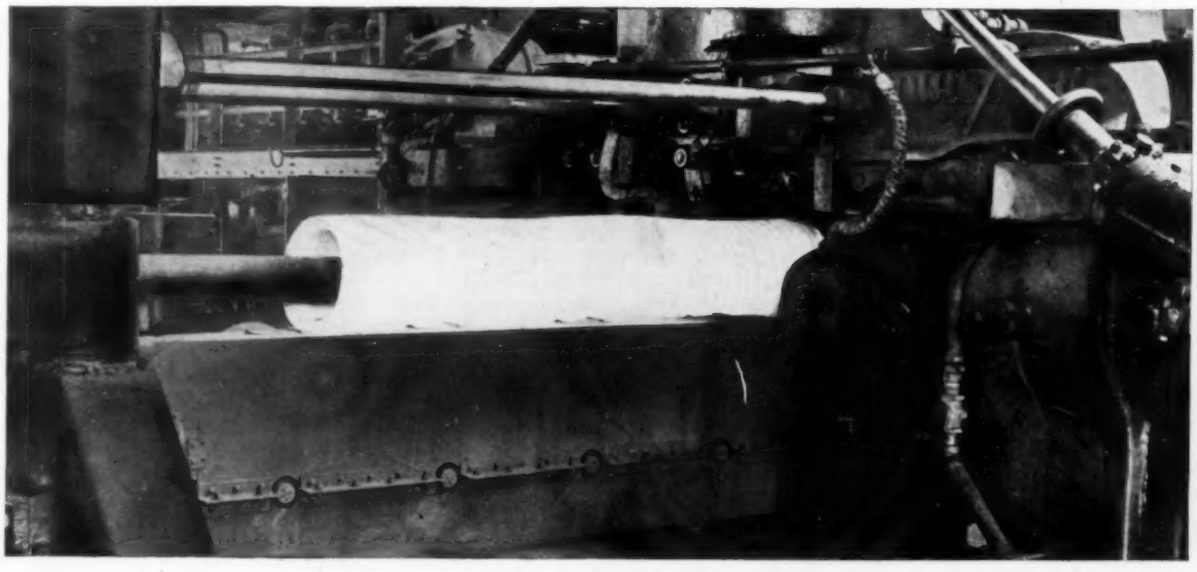

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